Form Ref. No. 393486

ADUR DISTRICT COUNCIL

APPLICATION FOR LISTED BUILDING CONSENT

Planning (Listed Buildings and Conservation Areas) Act 1990

ADUR DISTRICT COUNCIL PLANNING DIVISION

PLAN No.	ad/0021/07
DATE RECEIVED	25 MAY 2007

1 Applicant (in block capitals)

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Agent (if any)

Full name	
Address	
Phone	
Work Phone	
Fax	
Email	

2 Type of Application

I am applying for Listed Building Consent to: demolish a listed building	No
demolish part of a listed building (please see note 4)	No
I am applying to alter or extend a listed building	Yes
I am applying to fix an advertisement or structure to a listed building	No
I am applying to remove or change a condition on a Listed Building Consent	No

If "Yes", please give the condition number _____ and the application number _____

3 Please give the address of the building this application relates to.

Address	Old Shoreham Tollbridge
	River Adur Estuary
	Shoreham
	West Sussex

Do you own or control any land or buildings next to this site? No

(If 'Yes', the land or buildings should be outlined in blue on your plan)

Area of land the application relates to:

square metres _____ or hectares _____

4 Please describe the work you want to carry out

West Sussex County Council want to conserve and prevent further degradation of the Shoreham Old Tollbridge. This will be carried out with the minimum of intervention and replacement of timber. For full details of the proposed works and information about design and access please see enclosed "Shoreham Tollbridge Conservation Design Statement".

Are you applying for consent for work already carried out? No

If 'Yes', please tell us:

The application number of the planning permission for the development; and

The date the work was carried out

5 The Use of the Building

What is the building used for now? Bridge for pedestrians, cyclists and horse riders.

If the building is not in use, what was it last used for?

What do you plan to use the building for? Use will remain the same.

6 Grants

Have you received a grant for any work involved in this application? Yes

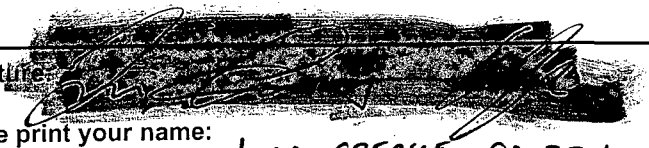
If "Yes", please specify

Heritage Lottery Fund grant has been agreed and is yet to be paid.

7 Please enclose four copies of this form and four sets of plans.
Please number your plans and write the numbers and scales against the titles here.
(Please see note 7)

	Plan Number	Scale
Location Plan	1	1:1,250
Block Plan	2	1:500
Detailed Plans	3	1:50

8 Signature

Signature: 

Date: 22/5/07

Please print your name: LISA CREAYE-GRIFFIN

Certificate under Section 11 of the Planning (Listed Buildings and Conservation Areas) Act 1990 (please see note

Certificate A

I confirm that: nobody except the applicant was an owner of the building or land involved at the beginning of the period of 21 days before the date of this application. ('Owner' means the freehold owner or a tenant with at least seven years of tenancy remaining).

Signature:  **Date:** 22/5/07

Please print your name: LISA CREAYE-GRIFFIN
FOR WEST SUSSEX COUNTY COUNCIL

Notes

1 You may find it helpful to call in at our Planning Section to discuss your plans before you fill in this form.

2 You can make the application yourself or you can employ someone (an "agent") to do it for you. If an agent makes the application, we will send all letters, including the decision notice, to them.

3 **Definition of a listed building**

A listed building is any building which:

- is included in a list of buildings of special architectural or historic interest made by the Secretary of State under Section 1 of the Planning (Listed Buildings and Conservation Areas) Act 1990;
- immediately before 1 January 1969 was under a Building Preservation Order under Part 111 of the Town and Country Planning Act 1962; or
- is under a current Building Preservation Notice served under Section 3 of the Planning (Listed Buildings and Conservation Areas) Act 1990.

4 ***Demolishing or partly demolishing a listed building***

You will normally need Listed Building Consent to demolish part of a listed building. However, this will depend on the amount of the demolition planned, and you should discuss your proposal with a Planning Officer, even if the demolition is minor. Some minor demolition may still need Listed Building Consent as it may be considered to be an alteration to a listed building.

You can only demolish a listed building if:

- you have Listed Building Consent; and
- you have told the Royal Commission on Historical Monuments about the proposed work and have given them reasonable access to the building for at least a month after getting Listed Building Consent. In some cases, the Commission may write to say that it does not need access.

5 **Altering or extending a listed building**

You need Listed Building Consent to alter, do work to or extend a listed building if the work would affect the building's character as a building of special architectural or historic interest. This applies to work inside and outside the building.

Anything which is fixed to the building or forms part of the site and has done since 1 July 1948 is treated as part of the listed building (for example, walls and outbuildings). This means that you must apply for consent to alter or

6 **Putting up an advertisement on a listed building**

You must have Listed Building Consent to put a sign on a listed building. This may not apply if you are replacing a sign we have already agreed to with one which meets the standards we set for the first sign.

7 **How to apply for Listed Building Consent**

Please send us **four** sets of your plans with the scale and north point clearly show shown (5 sets for applications in Lancing and Sompting). It would help us if these plans are size A3 or A4. One copy of the plans must be coloured to show the work you are applying for.

Your plans must all be prepared using the metric scale. You should include the following:

- A location plan using an Ordnanc Ordnance Survey map at a scale of 1:1250. The site must be outlined in red.
- A block plan at a scale of 1:500 showing the site and all neighbouring properties. You should show the location of the building (highlighted in red) and the location of any new buildings. You should show the location of any existing or proposed access. You should also highlight in blue the boundary of any other land you own which joins the site.
- Detailed plans at a scale of 1:50 or 1:100 showing the building. Your plans, elevations and sections should use colour to show the difference between existing and new work.

8 Certificate

We cannot accept an application for Listed Building Consent unless there is one of four certificates with it signed by or on behalf of the applicant. Please read the declaration carefully before you sign.

If you are not the owner or a tenant with at least seven years of tenancy remaining, you will have to give notice to the owners and fill in Certificate B. Certificates C and D are only relevant if you have tried to trace the other owners and have failed. You can get copies of these certificates and notices from the Planning Office. If you are the owner, fill in Certificate A on page 3.

9 Building Regulations and planning permission

These notes only cover Listed Building Consent. You may also need to apply fo for planning permission and for approval under the Building Regulations. You can get forms and further information from the Planning Office.

Please send your application to:

Chief Officer
Planning and Development Services
Civic Centre
Ham Road
Shoreham by Sea
West Sussex
BN43 6PR

Phone: **01273 263222**
Fax: **01273 263203**
E-mail: **developmentcontrol@adur.gov.uk**

Before sending your application please make sure you have:

- answered all the questions;
- signed and dated the application form;
- signed and dated certificate A (or certificate B if you do not own all the land);
- enclosed four sets of your plans (one must be coloured to show the work you are applying for); (5 sets for applications in Lancing and Sompting).

Remember that an agent can sign the form and certificate for you.



west sussex county council

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Shoreham Tollbridge Location Plan

Plan: 1

May 22, 2007

Environment & Development

1:1,250

N

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. AD/0321/07
DATE RECEIVED 29 MAY 2007

Path (um)

MHW

MHW

Mud

Mud and Sand

Posts

4.0m

MLW

Path

Sand

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Shoreham Tollbridge Block Plan

Plan: 2

May 22, 2007

Environment & Development

1:500

N

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. ADC0321/07
DATE RECEIVED 29 MAY 2007

MHW
MHW
Mud
Mud and Sand
MLW
Mud
Old Shoreham Bridge
(FB)
4.1m
CR
Sand

west sussex county council

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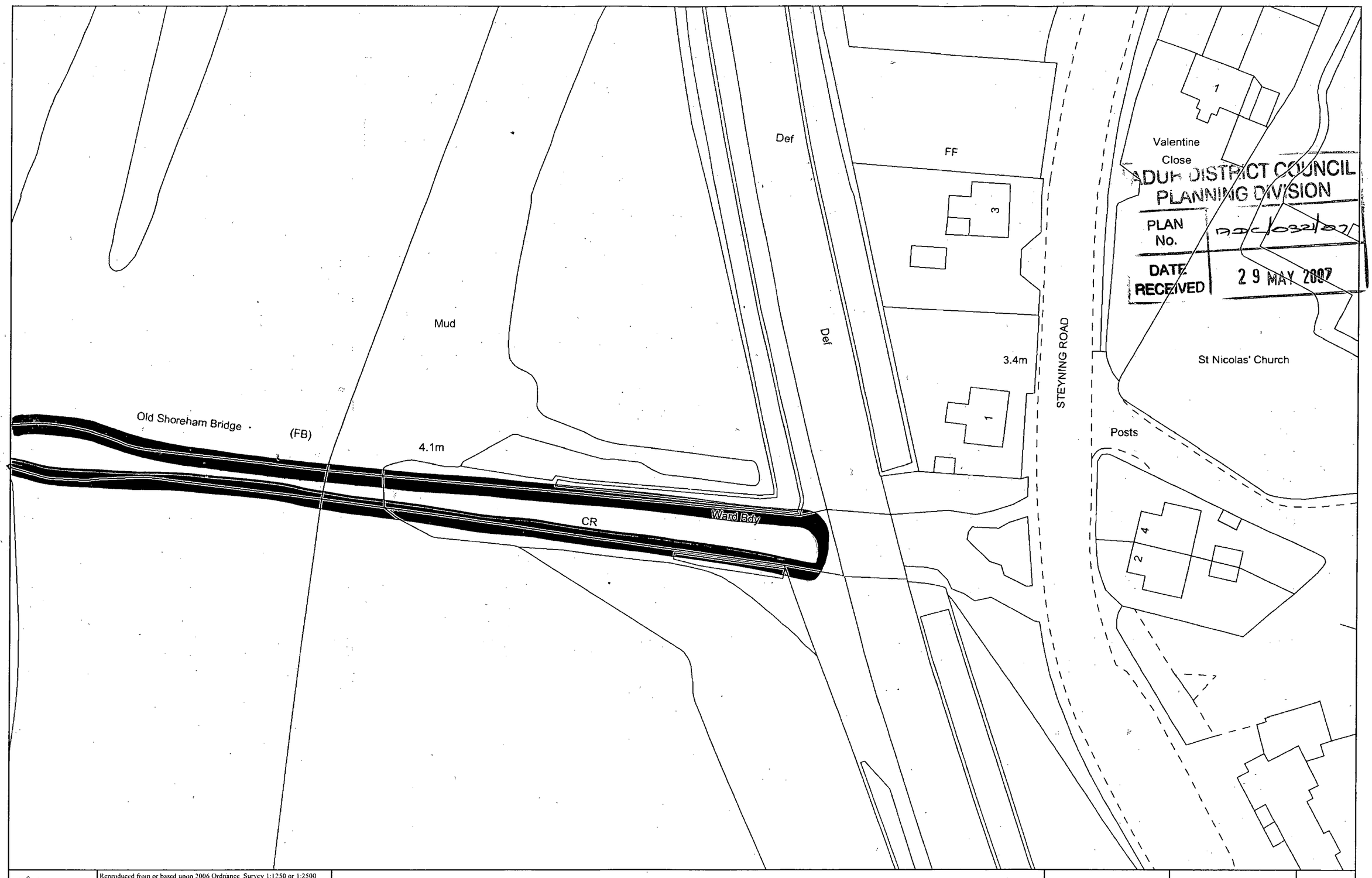
Shoreham Tollbridge Block Plan

Plan: 2	Environment & Development
May 22, 2007	1:500

N



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Shoreham Tollbridge Block Plan

Plan: 2

May 22, 2007

Environment & Development

1:500



Shoreham Tollbridge Conservation

Design Statement v1.4

West Sussex County Council

04 September 2006
Report v1.4
9P2795

ADUR DISTRICT COUNCIL
PLANNING DIVISION

PLAN No.	ADC/0321/07
DATE RECEIVED	29 MAY 2007

A COMPANY OF

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Status	Report v1.4
Date	04 September 2006
Project name	Shoreham Tollbridge Conservation
Project number	9P2795
Client	West Sussex County Council
Reference	9P2795/R/RG/Hayw

Drafted by	Rob Grinham	
Checked by	Simon Howard	
Date/initials check	01/09/06	
Approved by	Martin Whiting	
Date/initials approval	04/09/06	

ROYAL HASKONING

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1 INTRODUCTION

1.1 Living Document

This statement is intended to be a living document, which has evolved over the period of survey and design and reflects the needs of the Client, English Heritage and other stakeholders whilst demonstrating compliance with current Codes of Practice on engineering design, access and safety. **This report is to be read in conjunction with the drawings to allow the client, stakeholders and appointed contractor to understand the design philosophy behind the proposed repairs.**

1.2 Purpose of the Project

The purpose of the project is to conserve the Shoreham Old Tollbridge with minimum replacement of timbers so that the existing structure is conserved and retained wherever possible and to ensure that the bridge meets current structural design standards. Where it is found that replacement of timbers is required, then this will be carried out in a sustainable manner using timber from sustainably managed forests.

1.3 The Need for Conservation

In 1916 the tollbridge was extensively rebuilt and much of the timber replaced, although the original design was not changed significantly. Following a structural survey in 1983 some refurbishment work was carried out on the bridge but there was insufficient funding to complete the required works and a further inspection was advised for 10 years hence. In 1997, following a further inspection, the condition and safety of the bridge were called into question and safety measures were introduced along the parapets to stop the public from gaining access to the edge of the bridge. These safety measures, although practical, do not fully meet current structural design standards and are not a long term solution to the problem as they detract from the aesthetic quality of the bridge and give the bridge an air of neglect.

Currently the bridge is falling into disrepair and if no action is taken then it will eventually need to be closed to public access on safety grounds. With its important historical relevance and Grade II* listing, this is not an option and there is therefore an immediate need to extensively refurbish the bridge in order to conserve it.

A survey of the bridge undertaken in September 2005 has identified the minimum extent of the conservation works required and the specific timber supports and decking which it appears can be retained without conservation work at this stage (i.e. will be structurally sound for the design life). The current handrails are insufficient to meet current design standards as they are not strong enough and the gaps between them are much too wide. Therefore, unless they are refurbished the temporary safety fencing will have to remain in place.

1.4 Heritage Issues

Shoreham Old Tollbridge was opened in 1782 under an Act of Parliament, and is the oldest of five crossings of the River Adur estuary at Shoreham. It was initially built to provide a safe crossing over the river as an alternative to the ferry, but throughout its

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history it retained its importance as the main crossing link from Brighton to Worthing carrying vehicular traffic on the A27 trunk road up until 1970.

The bridge has always been of great importance to the local community, creating a vital link between communities on either side of the river and more recently as an important structure for recreational, leisure and access purposes, giving access across the river for walkers, cyclists and horse-riders.

The retention of the form of the bridge during the rebuild of the early 20th Century was significant factor in the bridge being listed as a Grade II* structure in 1982, when it was described as one of the best remaining examples, on a large scale, of a form of bridge common in the 18th and 19th Century. Due to the significant heritage importance of the bridge, the Heritage Lottery Fund has appointed their own advisor to monitor the design and conservation work in order to ensure that the historical nature of the bridge is retained.

1.5 Scope of Work

1.5.1 Topographic survey

An onsite survey undertaken in September 2005 has recorded plan and level measurements for the main features of the structure in order to establish the existing general arrangement. Criteria recorded include levels on the deck support cross-beams, the centre of the structure and the level of river bed at the location of the supporting piles. Whilst this is sufficient for a structural assessment of the site re-measurements will be required for detailed construction and setting out purposes at the commencement of and during the construction phase of the works.

1.5.2 Condition/Layout Survey

Divers have assessed the condition of the bridge supports below water level, whilst qualified conservation & structural engineers have recorded the condition of the structure above water by means of a visual survey. No inspection of the piles below bed level was undertaken. A picture of the current condition of each section of the bridge has been established enabling a determination of how much of the bridge structure is likely to be conserved and which of the timbers need to be replaced. However it is recognised that this survey did not include any invasive testing of the timbers or connections and that the implementation of the work is likely to provide the best indication of the current condition of the bridge.

1.5.3 Archive Search

Research has been carried out into historical records of the bridge in order to determine the original form, materials used and construction details. As far as possible, background research has also established dates of previous restoration work to the bridge structure and the extent to which materials were replaced and the form altered.

1.5.4 Record Documents

The topographical and condition surveys are recorded in Royal Haskoning document 'Shoreham Old Toll Bridge, Survey and Condition Schedule', (4 October 2005), Version

1.1. Data collected on historic records is recorded in Hockley and Dawson document 'Shoreham Old Toll Bridge, Desk Study', (October 2005).

1.5.5 Design Phase

Design work incorporates the need to be as sympathetic as possible to the historical nature of the structure, retaining and reusing as much of the existing bridge material as possible, whilst meeting current structural design standards. The existing handrails and bridge parapet require upgrading in a sympathetic manner whilst they must also meet current design and safety standards. Where possible decking timber is designed to be reused and original supports retained where their condition allows. As the bridge is no longer required to take full vehicular loading, carrying pedestrians, horse-riders and light vehicles only, the design loading can be reduced. This in turn increases the number of timbers that can be retained. Where recycling and retention of the bridge timber is not possible, replacement timber is to be sourced from sustainably managed forestry operations.

As part of the conservation design work it has been necessary to locate the position of utility services in the vicinity of the bridge. It has been established that British Telecom lines cross the bridge in a plastic pipe slung below bridge deck level, whilst NTL cables run through a disused water pipe on the southern side of the bridge cross head. The construction works will need to allow for the diversion of these services and the eventual reinstallation of these lines. The precise works required are still to be determined.

1.6 Communications

As the conservation of the tollbridge has a high local public profile there is a need to communicate to stakeholders and the general public the aims of the project and how they will be reached. Scheme Design Boards have been placed at each end of the bridge explaining the project and leaflets have been produced and distributed to interested parties.

The project is being carried out with an open approach through close liaison with the Heritage Lottery Fund appointed advisor, stakeholders and conservation team members.

2 CONTRACTUAL ARRANGEMENTS

Royal Haskoning are retained by West Sussex County Council under Option A of the second edition (1998) of the NEC Professional Services contract for the design phase of the Project. Hockley and Dawson are appointed subcontractors to Royal Haskoning to represent the needs of English Heritage and the Heritage Lottery Fund. JT Mackley are the preferred contractor for the scheme.

3 PROGRAMME OF WORK

The Topographical and Condition/Layout Surveys were completed to programme and the Archive Search/Desk Top Study is also complete.

Initial designs were issued for comment to the Client, English Heritage and the preferred contractor on 20th December 2005. Comments were received from all parties by 10th

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February 2006. In summary there were no comments on the structural work on the main elements of the bridge, with the main area of concern being the handrail details.

Further discussions on these handrail details were undertaken between Royal Haskoning and the stakeholders including submission of further design sketches prior to an approved design being agreed in July 2006. During this period a review of the other details and drawings was completed such that the design work was effectively complete.

Design for the new agreed handrail detail was completed by mid March 2006 at which point the design drawings and Design Statement was issued and this phase of the project completed.

4 DESIGN

4.1 Design Life

The design details and calculations produced by Royal Haskoning assume a design life of 30 years, during which period the bridge would undergo a regular maintenance and repair regime.

4.2 Design Assumptions

The design as undertaken necessarily makes a number of assumptions with regards to loadings, condition of existing timbers and the future use of the bridge.

4.2.1 Design Loadings

It has been assumed that whilst the bridge has in the past functioned as a crossing for vehicular traffic; in the future this will be restricted to pedestrian or equestrian traffic. Therefore applying BS5400 (see section 4.2.2), an imposed load of 5.0 KN/m^2 has been applied to the deck of the bridge.

All members are designed for their own dead load, with the following assumed timber densities used;

- Opepe 944 kg/m^3
- Greenheart 1312 kg/m^3
- Purpleheart 1104 kg/m^3
- Douglas Fir (existing main members) 672 kg/m^3

Imposed wind loadings were assessed for both the handrail designs and the main pile design works using BS 5400 as appropriate.

In addition handrails were assessed for the affect of pedestrian and equestrian loading to the rail and posts, and the consequent effect on the rest of the structure.

For the design of the timber members these loads were applied unfactored with the grade stresses of the applicable timbers modified to give a permissible stress limit.

4.2.2 Design Codes

Where appropriate, all design work is to conform to, inter alia, the following design codes:

BS 5268, Structural Use of Timber (2002)

BS5400, Design of Highway Bridges (5400)

BS 7818, Pedestrian Restraint Systems in Metal (1995)

It is to be noted that although the majority of the handrailing does conform to BS 7818 with regard to the height and configuration, the requirement for additional vertical safety members in the top section has been omitted as this would significantly change the appearance of the bridge. All stakeholders have now had an input to the final handrail arrangement and it is acceptable to all parties whilst not having 100 percent compliance with this code. We would therefore expect West Sussex CC in conjunction with English Heritage to take this into account in respect of their responsibilities for the operation of the bridge.

4.2.3 Condition and Level survey

As noted in Section 1.5.2 topographical and visual condition surveys have been undertaken on the bridge and submitted as a report to all stakeholders. The topographical survey undertaken is sufficient to provide basic information on the geometry of the bridge for outline design purposes; however it will be necessary to re-measure the bridge in greater detail for detailed construction and setting out requirements, at the commencement of and during the construction phase.

The report also provides a visual survey of all the structural members on the bridge, including a below water level dive survey, but the members were not surveyed below bed level. In addition the bridge abutments are also covered by this survey. Whilst this information is sufficient to allow outline design to be undertaken and an assessment of the likely requirements for each member to be made, it is recognised that an amount of uncertainty remains regarding the condition of the timbers. It is therefore assumed that during the construction phase continual assessment of bridge members, as they are dealt with, will be undertaken and the work required reassessed as applicable.

4.3 Design Philosophy

This document forms a statement setting out the main design principles applied to the proposed refurbishment. There are two main overriding design principles, conservation and structural performance of the structures.

Conservation involves the following wherever possible, without compromising the structural performance of the structure:-

- Maintaining overall shape, alignment and level of structure
- As far as possible follow a principle of 'repair as found' maintaining size and configuration of individual members

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- Maintaining size and arrangement of connections between members
- Retaining and/or reusing existing members
- Retaining and/or reusing existing connections
- If material is not reused on site sustainable reuse off site wherever possible
- Where new timber is required it is to be sourced from sustainably managed forestry operations

Structural performance involves:-

- Meeting required extended lifespan of structure before a further major refurbishment is necessary (subject to normal routine maintenance) as discussed in Section 4.1
- Meeting design loads applicable to anticipated future operating conditions as discussed in Section 4.2.1
- New works to allow for survey tolerances and material tolerances
- Meeting current design standards as discussed in Section 4.2.2
- Meeting current health and safety standards
- Compensating for uncertainties in the existing structure (for example by improved distribution of loads through the structure)
- A flexible design that allows for changes in the scope of works following from on site investigations during the construction phase
- Facilitating the refurbishment process

Individual components have been designed in detail but their precise location, context and quantity is indicative only. The structure can be divided into four main elements:-

1. East and west abutments
2. Pilehead crossbeams and longitudinal beams
3. Pile bents
4. Decking and handrailing

The following sections describe the philosophy behind the design of each of these elements including any necessary compromises with the main design principles.

4.3.1 East and West Abutments

The refurbishment of the east and west abutments largely involves like-for-like replacement of defective members and some visible structural reinforcement of the abutments in a style similar to that existing. On the river facing sides of these

abutments, pile bents are to be repaired using the principles described in Section 4.3.2, with the exception that bolts will be used rather than straps to join timber members.

As previously stated, wherever possible, existing members are to be retained. However it is intended that the toe of the west abutment is reinforced with new planking along the North and South walls, with planks replaced on the river facing wall as required. The East abutment is repaired by adding additional timber piles and replacing timber planking. The refurbishment also includes some hidden structural reinforcement involving backfilling with concrete. The exact arrangement may need to be refined on site depending on conditions discovered during the works.

Although not detailed on the drawings, there are in the vicinity of the abutments the remains of two World War II era roadblocks. It is the wish of West Sussex County Councils to retain these structures which may require some stabilisation works additional to the work shown on the abutments, the full extent of which would best be determined on site.

4.3.2 Pilehead Crossbeams and Longitudinal Beams

The refurbishment of the pilehead crossbeams and longitudinal beams involves the complete replacement of the existing with new. The grid of crossbeams and longitudinal beams represents a key structural element within the bridge. It distributes the live loadings into the pile bents, it ties together the individual piles and pile bents, and it provides the structural platform for the decking and handrailing.

To this end the longitudinal beams are to span over three pile bents wherever practically possible, with the joints staggered across the bents. For the holding down cleats to the crossbeams a minimum of 20% of the coachscrew connections are to be replaced with through bolted connections. Crossbeams are to be continuous members with no joints.

The crossbeams and longitudinal beams are largely out of sight. They are to be replaced in Greenheart timber to similar dimensions to the existing timbers. All of the existing crossbeams and longitudinal beams are to be removed. Any sound crossbeams and longitudinal beams are to be disposed of in a sustainable fashion.

4.3.3 Pile Bents

The refurbishment of the pile bents involves ad-hoc repairs using a suite of measures for different applications throughout the bridge structure. These repairs are based on the structural assessment of the structure undertaken in September 2005. A combination of these measures is applied to each pile bent to meet the structural loads/lifespan of the bridge. For each pilehead the minimum measures to achieve this are those detailed on the drawings. It is assumed that the piles are sound below bed level.

Where a pile length is deemed to be in such poor condition that to retain it compromises the structural integrity of the structure, the defective length of pile is removed and replaced with new using cheek plate connection(s) at and around the splice joint. Alternatively, if the pile is deemed to be in a more sound condition but unlikely to last 30 years, then the pile is strengthened by the addition of new timber cheek plate(s) held in place by metal straps and bolts. It may also be the case that more marginal piles showing signs of splitting are strengthened by the addition of new metal straps only.

The locations of the straps shown on the drawings are only indicative and will need to suit local conditions.

Should it become evident during construction that a pile, whilst sound in general, is in poor condition at the connection with the crossbeam then the defective pilehead should be removed and replaced with new using a metal strap connection.

There was evidence during the condition survey of necking at the base of one of the piles on pile bent 17, drawing 9P2795/0114. The detail in this situation is to bridge the necking of the pile with cheek plates as shown on the drawing.

Where the existing metal straps are found to be defective or heavily corroded then the removal of the defective metal strap and replacement with new is the recommendation of this design. All new straps are to be hot dipped galvanised metal with a decorative paint coating. The paint will need to be applied without damaging the galvanised finish (for example without grit blasting) as the galvanising forms the primary protective coating. The paint colour is to be agreed prior to the commencement of site works. All metalwork is to be hot dipped galvanised and painted before delivery to site, cutting on site is to be avoided. Where cutting is absolutely essential it is to be site treated to restore the primary protective coating.

Where a beam or brace is deemed inadequate the recommendation is to remove the defective beam or brace and replace with new timber. This assumes that all bolts will also be removed and replaced with new Grade 8.8 Black bolts or similar approved. In many cases the timber is sound but there is a requirement to replace defective bolts. If the bolt is replaced but the timber retained, the existing bolt hole may be reused if sound. Alternatively a new bolt hole will be required, whilst maintaining appropriate edge distances.

4.3.4 Handrailing and Decking

The design of the existing handrails comprises primary stanchions at each pile bent, standing on the pile bent cross-head and fixed to the outside longitudinal beam, for example see drawing no. 9P2795/0010. Many primary stanchions are braced in a lateral direction by an inclined brace outside the line of the handrail, bracing back to an extension of the cross-heads. In a few cases, the inclined brace is complemented by a mainly decorative second inclined brace bracing back to the outside pile of the bent below the cross-head. It is not considered a structural requirement to replace the second brace. Whether to do so, on aesthetic ground, will be decided between the stakeholders prior to construction. This is one of the elements where existing timbers could be reused.

In the existing conditions the handrailing spans between the primary stanchions with an infill board and three rails. The rails and infill board are given extra support by intermediate stanchions fixed to the outside longitudinal beams. One bay between primary stanchions, over the main navigation channel and spanning about 7.75 metres, is fitted with three intermediate stanchions on each side. The two bays either side of the navigation bay span about 6.1 metres and are fitted with two intermediate stanchions each side. All remaining bays, spanning generally between 4.3 and 5.8 metres, are fitted with one intermediate stanchion. Intermediate stanchions to be equidistantly positioned between main posts.

The refurbishment of the decking and handrailing involves the complete replacement of the handrail members with new timbers and re-use of the decking. The structural members comprise handrailing posts, braces and rails. The cladding items comprise decking planks and infill boards to the handrailing. For bridge users the cladding items represent the most visible aspect of the structure.

It is assumed that the existing timber decking will, in the majority of cases, be able to be reused, with a new fixing detail as shown in the drawings. However should a plank be found in a condition that would prevent reuse, then a similar section of new Opepe decking will be used in its place. Where decking is reused any unused boltholes in the timber are to be plugged. Decking coachscrews are to be retightened at the end of the construction period prior to filling with a bitumen plug.

The design philosophy for the rails assumes that all primary stanchions will be braced to the cross-head but that no secondary bracing back to the pile will be required. Intermediate stanchions will be bolted to longitudinal beams and support blocks to resist the induced rotational loads. All stanchions are to be designed to the same section size which assists rail and board fixing.

The design of the rails represents a slight departure from the principle of maintaining the exact size and configuration of existing individual members. After discussion with all stakeholders it was considered that a change in section to rectangular rails was justified by historic information about the bridge and in addition that these rails be in-line with the stanchions. The top rail must span two or three bays and is considered to act as a waling connecting stanchions and distributing load between them, with the lower rails being a smaller section size.

In order to conform with current codes of practice for equestrian bridges, the infill board will effectively be increased in height to 1000mm and placed on the inside face of the stanchions.

4.4 Facilitating the Refurbishment

Whilst a limited survey of the bridge has been undertaken, it is assumed by the designers that re-measurement of the bridge will be undertaken at the commencement of and during site work. This will allow the refurbishment works to follow the existing lines and levels where sensible, whilst avoiding local irregularities and potentially sweetening the lines of the bridge. This should improve the general appearance of the bridge whilst retaining the existing character.

The design assumes that for the majority of the works, partial dismantling of the existing structures will be required. The exact extent of this dismantling is to be determined on site. The methodology for dismantling of timbers whilst ensuring structural stability during the works, and the subsequent reuse or disposal of these timbers will need to be agreed prior to the commencement of works on site.

During the construction period it is the intention to maintain access across the bridge for the public. This design statement does not preclude this but a detailed methodology for achieving this will need to be agreed prior to any start on site. This will, among other things, be required by West Sussex County Council's appointed Planning Supervisor.

The assumptions within the design process including identified hazards and residual risks have been included in Appendix 2 Design Risk Assessment. It is assumed that on site detailing will be required to avoid trip hazards, unsafe protrusions, sharp edges, unsafe gaps etc.

The Construction Drawings give a substantial range of repair options to the refurbishment team, and a level of refurbishment that we would consider the minimum required work. However it is recognised that the best form of condition survey for this type of work is undertaken with full site resources at the commencement of and during construction, particularly whilst the existing structure is being partially dismantled. It will be at others risk to reduce the level of replacement below that shown in the drawings, and others judgement to increase the level of replacement. This responsibility will need to fall to an identified representative of the stakeholders.

The on site changes that will result from this approach mean that it is important that correct records are kept throughout the construction process to allow the creation of As Built drawings as the work progresses, as there may be some variance between the construction issue drawings and the on site decisions made. In addition to the As Built drawing set a manual on aftercare/conservation will be required, either as a separate report or as an extension to this design statement. It is our opinion that it would be most effective to produce this report at the end of the construction period in order to incorporate all changes made and lessons learnt during construction.

4.5 Drawing Details

The drawing set for construction includes drawings from the original Survey and Condition Schedule Report which have indicative levels of the structure, sizes of existing timbers and distances between pile bents. These drawings do not show the defects, but when read in conjunction with the Survey and Condition Schedule Report, allow the defects on each member to be identified.

The proposed new details are illustrated on three detail drawings (the 0200 series) that are then applied to each pile bent on the bridge in a series of elevation drawings. These drawings show in principle the minimum replacement deemed necessary for each structural member, with the exact setting out to be determined on site. These drawings do not show any existing defects and it is likely that on site changes will result in amendments to the scope of works as shown. The drawings also do not necessarily indicate members that will need to be temporarily removed to allow access to other members.

4.5.1 Drawing List and Design Details

A full Drawing List is included in Appendix 1, listed below are the particular construction details for the proposed work and their location within the drawings.

Table 1 Location of Design Details within Drawings

DRAWING No.	DETAIL	TITLE
9P2795/0200	Detail A	DECKING COACH SCREW FIXING
	Detail B	PILEHEAD CONNECTION
9P2795/0201	Detail C	CHEEK PLATES
	Detail D	SPLICE CONNECTION
	Detail E	BEAM & BRACE CONNECTIONS
	Detail F	LONGITUDINAL BEAM TO CROSS BEAM CONNECTION
	Detail G	SUPPORT STRAP
9P2795/0202	Detail H	NEW TIMBER HANDRAILS
	Detail J	TOP RAIL POST CONNECTION
	Detail K	INFILL BOARD/POST CONNECTION
	Detail L	MAIN POST/LONGITUDINAL BEAM CONNECTION
	Detail M	INTERNEDIATE POST/LONGITUDINAL BEAM CONNECTION
	Detail N	POST/MID-RAIL CONNECTION
	Detail P	DIAGONAL BRACE/POST CONNECTION (TOP)
	Detail Q	DIAGONAL BRACE/CROSSBEAM CONNECTION

4.5.2 Terminology

Throughout the suite of design drawings the following terminology is followed.

Table 2 Drawing Terminology

TERMINOLOGY ON DRAWINGS	MEANING
No Comment	Existing left undisturbed
To Remain	Existing left undisturbed
Reuse	Existing temporarily removed and then re-fixed
Replace	Existing removed (and disposed off site*) and new fixed in its place
New	New member/fixings where none existed beforehand
Remove	Existing removed (and disposed off site*) and not replaced
Handrailing	All fixtures and fittings related to the pedestrian and equestrian restraint system
Decking	Timber bridge deck boards
Beams	Longitudinal/Pile Head Crossbeam/Middle/Lower "horizontal" members
Braces	Diagonal main bracing to pile bents
Piles	Vertical timber members carrying bridge loads into founding material
Cheek Plates	Timber members used to strengthen piles

* = where sustainable re-use on site is not possible

5 REFERENCES

1. Shoreham Old Toll Bridge Survey and Condition Schedule
Version 1.1
04 October 2005
Royal Haskoning Report

2. Shoreham Old Toll Bridge Desk Study
October 2005
Hockley and Dawson Report

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ROYAL HASKONING

Appendix 1
Drawing List

ADUR DISTRICT COUNCIL
PLANNING DIVISION

PLAN No.	AD/0321/07
DATE RECEIVED	29 MAY 2007

Table 3 - Drawing List

DRAWING No.	TITLE	REVISION	SIZE
9P2795/0001	SURVEY LAYOUT PLAN	A	A3
9P2795/0002	STRUCTURE LEVELS SURVEY	A	A3
		A	
9P2795/0010	PILE BENT SURVEY PILES 1-6	A	A1
9P2795/0011	PILE BENT SURVEY PILES 7-11	A	A1
9P2795/0012	PILE BENT SURVEY PILES 12-16	A	A1
9P2795/0013	PILE BENT SURVEY PILES 17-21	A	A1
9P2795/0014	PILE BENT SURVEY PILES 22-26	A	A1
9P2795/0015	WEST ABUTMENT SURVEY	A	A1
9P2795/0016	EAST ABUTMENT SURVEY	A	A1
9P2795/0100	PILE BENT ALTERATIONS – PILE BENTS 1 & 2	A	A1
9P2795/0101	PILE BENT ALTERATIONS – PILE BENTS 3 & 4	A	A1
9P2795/0102	PILE BENT ALTERATIONS – PILE BENT 5	A	A1
9P2795/0103	PILE BENT ALTERATIONS – PILE BENT 6	A	A1
9P2795/0104	PILE BENT ALTERATIONS – PILE BENT 7	A	A1
9P2795/0105	PILE BENT ALTERATIONS – PILE BENT 8	A	A1
9P2795/0106	PILE BENT ALTERATIONS – PILE BENT 9	A	A1
9P2795/0107	PILE BENT ALTERATIONS – PILE BENT 10	A	A1
9P2795/0108	PILE BENT ALTERATIONS – PILE BENT 11	A	A1
9P2795/0109	PILE BENT ALTERATIONS – PILE BENT 12	A	A1
9P2795/0110	PILE BENT ALTERATIONS – PILE BENT 13	A	A1
9P2795/0111	PILE BENT ALTERATIONS – PILE BENT 14	A	A1
9P2795/0112	PILE BENT ALTERATIONS – PILE BENT 15	A	A1
9P2795/0113	PILE BENT ALTERATIONS – PILE BENT 16	A	A1
9P2795/0114	PILE BENT ALTERATIONS – PILE BENT 17	A	A1
9P2795/0115	PILE BENT ALTERATIONS – PILE BENT 18	A	A1
9P2795/0116	PILE BENT ALTERATIONS – PILE BENT 19	A	A1
9P2795/0117	PILE BENT ALTERATIONS – PILE BENTS 20 & 21	A	A1
9P2795/0118	PILE BENT ALTERATIONS – PILE BENT 22	A	A1
9P2795/0119	PILE BENT ALTERATIONS – PILE BENT 23	A	A1
9P2795/0120	PILE BENT ALTERATIONS – PILE BENT 24	A	A1
9P2795/0121	PILE BENT ALTERATIONS – PILE BENT 25	A	A1
9P2795/0122	PILE BENT ALTERATIONS – PILE BENT 26	A	A1
9P2795/0200	TIMBER CONNECTION DETAILS – SHEET 1 OF 2	A	A1
9P2795/0201	TIMBER CONNECTION DETAILS – SHEET 2 OF 2	A	A1
9P2795/0202	HANDRAILING DETAILS	B	A1
9P2795/0211	WEST ABUTMENT ALTERATIONS	A	A1
9P2795/0212	EAST ABUTMENT ALTERATIONS	A	A1

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ROYAL HASKONING

Appendix 2
Design Risk Assessment

ADUR DISTRICT COUNCIL
PLANNING DIVISION

PLAN No.	ADC/0321/07
DATE RECEIVED	29 MAY 2007

ROYAL HASKONING

HAZARD ELIMINATION AND MANAGEMENT LIST

Name: R J Grinham | Project: Old Shoreham Toll Bridge

Project Code: 9P2795 | Date: 27 March 2006

Ref. No.	Activity	Hazard	Persons at Risk	Design measures taken to eliminate or reduce the hazard	Action Required By	Action Required Date	Information provided about the residual hazards
	General						
G1	Construction activity on Pedestrian Bridge	Injury to Public in proximity to construction works in progress	Public pedestrians and horse riders	Design provides a kit of solutions to allow the construction method to be flexible, helping to facilitate safe division between public and workers	RH	March '06	Maintenance of open bridge crossing for public access is still required. This still results in proximity to construction
G2	Construction activity above public waterway	Falling debris reaching waterway	Vessels on waterway Workers below bridge	Maintain handrailing along bridge. Minimise work required.	RH	March '06	Maintenance of open bridge crossing for public access required Waterway to remain open, a risk to workers and vessels remains
G3	Activity at height in front of handrailing above public waterway	Falls from height by persons seaward of handrails	Workers on bridge	Minimise work seaward of the handrails. Incorporate flexibility of fabrication into the design.	Contractor	2006	An element of construction has to be done in situ. Contractor to follow HSE best practice guidelines.
	Bridge Structure						
BG1	Construction of new handrail	Removal of barrier that prevents falls from height	Public pedestrians and horse riders Workers on bridge	Design to Incorporate flexibility and simplicity into the design site to minimise time without handrail system	RH	March '06	Barrier must be maintained at all times during construction by contractor
BG2	Installation of timber beams and piles	Heavy loads to be carried along bridge and placed in structure	Public pedestrians and horse riders Workers on bridge	Minimise number and section sizes of new members in design whilst retaining historic character of the structure.	RH	March '06	Lifting of heavy loads to be carried out following HSE best practice guidelines. Public and working areas to be kept separated.
BG3	Extent of damaged timber unknown	Quantity of work required and current capacity of bridge unknown.	Workers. Public	Minimise unknowns by carrying out a visual condition survey of the bridge	RH	March '06	Full extent of works required is not known; to be determined on site

ROYAL HASKONING

HAZARD ELIMINATION AND MANAGEMENT LIST

Name: R J Grinham | Project: Old Shoreham Toll Bridge

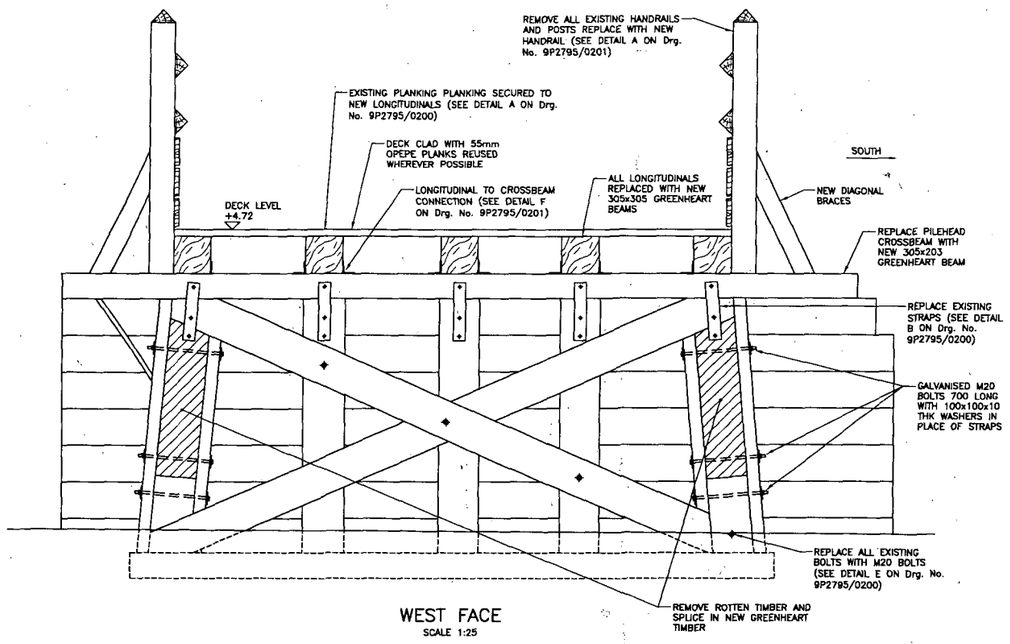
Project Code: 9P2795 | Date: 27 March 2006

Ref. No.	Activity	Hazard	Persons at Risk	Design measures taken to eliminate or reduce the hazard	Action Required By	Action Required Date	Information provided about the residual hazards
BG4	Dismantling of existing structures	Weakening of existing structure	Workers. Public Stakeholders	Design to minimise dismantling where possible.	RH	March '06	Full extent of works required is not known; to be determined on site
BG5	Sharp edges on timber beams, posts and handrails	Splinters and cuts from timber	Workers. Public	As detailed in Design Statement sharp edges etc to be removed from surfaces to be handled frequently, e.g. handrails	Contractor	2006	Residual hazard will remain to workers from other timbers, appropriate PPE and HSE Guidelines to be applied
BG6	On site drilling of bolt holes etc.	Potential hand vibration	Workers	Contractor to pre drill as many members as practical	Contractor	2006	Residual hazard will remain to workers, appropriate PPE and HSE Guidelines to be applied
	Abutments						
ABT1	Driving of wooden piles	Excavation before and vibration during driving causing existing wall instability	Workers driving piles	Piles as close as possible to existing situation Slope behind wall stabilised as required	RH	March '06	
ABT2	Voids behind existing wall	Potential collapse of wall.	Workers in wall construction	Fill any existing voids with concrete as a part of wall construction. Design the timbers to span over any voids that may form, due to settlement, behind the new wall.	RH	March '06	
ABT3	Extent of damaged timber unknown	Quantity of work required and current capacity of abutments unknown.	Workers. Public Stakeholders	Minimise unknowns by carrying out a visual condition survey of the bridge	RH	March '06	Full extent of works required is not known; to be determined on site
ABT4	Piles undermined by action of river	Strength of walls of abutment reduced	Public	Design piles and supporting rails for minimum embedment	RH	March '06	

ROYAL HASKONING	HAZARD ELIMINATION AND MANAGEMENT LIST	Name: R J Grinham	Project: Old Shoreham Toll Bridge
		Project Code: 9P2795	Date: 27 March 2006

Ref. No.	Activity	Hazard	Persons at Risk	Design measures taken to eliminate or reduce the hazard	Action Required By	Action Required Date	Information provided about the residual hazards
	Welfare						
W1	Welfare facilities at start of work	No services immediately available	Workers at start of works		Contractor	2006	Provision of basic facilities at site when works in progress
	Services						
S1	Work at abutment and across the bridge	Disruption of ducting and or service cables (BT and NTL)	Workers Public Service Company Customers	Service companies affected identified and consulted with, information included in design statement.	Contractor	2006	Contractor to provide temporary support etc as required. Vigilance by all on site to avoid damage

DRG No. 9P2795/0212 **DO NOT SCALE**



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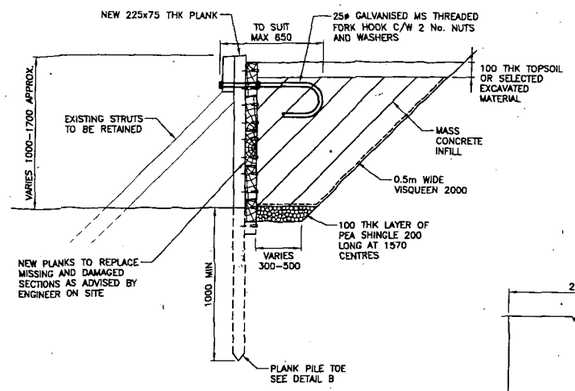
SCALE 1:25



WALL TYPE A
SECTION
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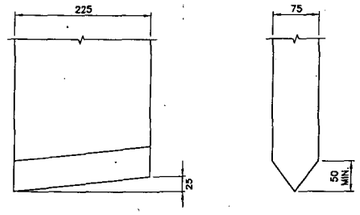
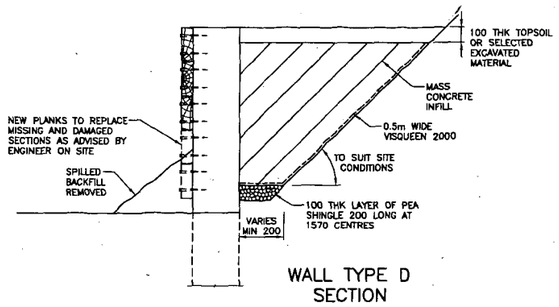
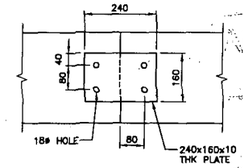


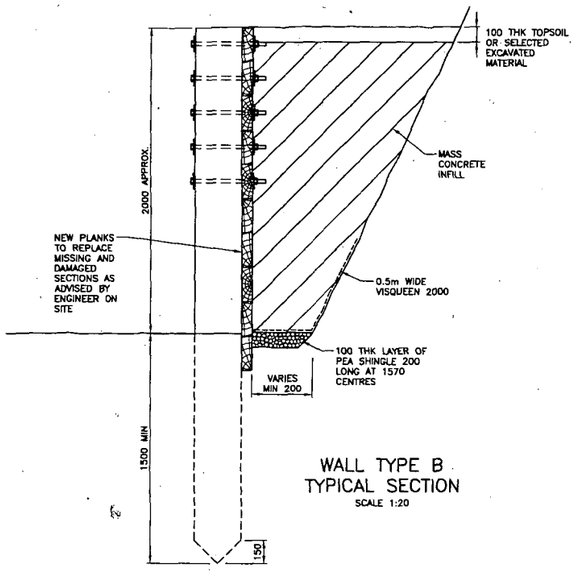
DETAIL B
PLANK PILE TOE
SCALE 1:5



WALL TYPE D
SECTION
SCALE 1:20



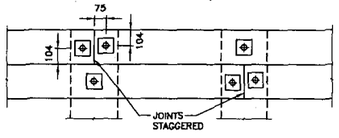
DETAIL A
SCALE 1:10



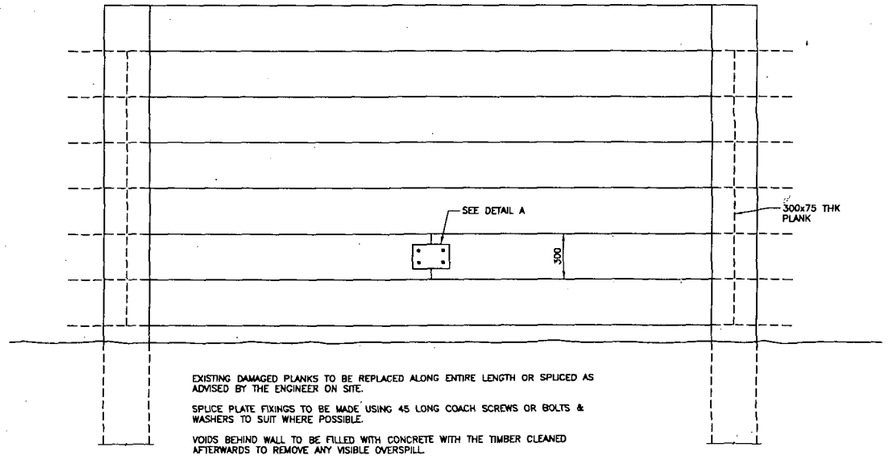
ALL PILES 305x305x3500
EMBEDMENT DEPTH 1500 MIN
CUT TO LEVEL POST DRIVING

WALL TYPE B
PLAN
SCALE 1:20

WALL TYPE B
TYPICAL SECTION
SCALE 1:20



WALL TYPE B
ELEVATION SHOWING JOINTS
SCALE 1:20



EXISTING DAMAGED PLANKS TO BE REPLACED ALONG ENTIRE LENGTH OR SPLICED AS ADVISED BY THE ENGINEER ON SITE.

SPLICE PLATE FIXINGS TO BE MADE USING 45 LONG COACH SCREWS OR BOLTS & WASHERS TO SUIT WHERE POSSIBLE.

VOIDS BEHIND WALL TO BE FILLED WITH CONCRETE WITH THE TIMBER CLEANED AFTERWARDS TO REMOVE ANY VISIBLE OVERSPILL.

REPLACEMENT PLANKS TO BE SIZED TO SUIT EXISTING NOMINAL 300 HIGH PLANKS.

WALL TYPE C
PART ELEVATION
SCALE 1:20

NOTES.

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. FOR FULL DESCRIPTIONS OF EXISTING PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, OLD SHOREHAM TOLL BRIDGE SURVEY AND CONDITION SCHEDULE.
4. PLATES ETC. TO BE GRADE S275 STEEL, BOLTS TO BE GRADE 8.8, BLACK TO BS 4190, NUTS TO BE GRADE 8.
5. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460.
6. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
7. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
8. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
9. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
10. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES FROM BOLT.
11. ALL COACH SCREWS TO BE M16 GALVANISED 110 LONG.
12. ALL DRILLED HOLES TO BE CLEANED OF SWARF TO ENSURE NO SPLITTING OF TIMBER WHEN BOLT OR COACH SCREW INSERTED/TIGHTENED.
13. FOR ALL COACH SCREW CONECTIONS THE HOLES DRILLED SHALL BE EQUAL IN DIAMETER TO THE UNTHREADED SHANK OF THE COACH SCREW FOR A DEPTH EQUAL TO THE LENGTH OF THE UNTHREADED SHANK AND THEN REDUCED IN DIAMETER, TO ENSURE A SECURE FIT, TO A TOTAL DEPTH OF 10mm GREATER THAN THE LENGTH OF THE COACH SCREW.
14. ALL BOLTS TO BE INSTALLED TO A DRIVING FIT UNLESS NOTED OTHERWISE.
15. HOLES FOR BOLTS IN PLATES/ANGLES TO BE 'STANDARD' CLEARANCE HOLES' IN ACCORDANCE WITH BS5950 UNLESS NOTED OTHERWISE.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

...DUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. 00/00321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AIK	APC	RJ
0	12.05	DETAILED DESIGN - EH REVIEW	AIK	SHW	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
EAST ABUTMENT ALTERATIONS

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rume House
Harlands Road
Haywards Heath, RH16 1PG
Telephone +44 (0) 1444 458 551
Fax +44 (0) 1444 440 685
E-mail info@royalhaskoning.com
Internet www.royalhaskoning.com

DRAWN	A.I.K	CHECKED	SHW	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	AS SHOWN	AUTOCAD REF.	9P2795-0211 & 0212		
DRAWING No.	9P2795/0212	REVISION	A		

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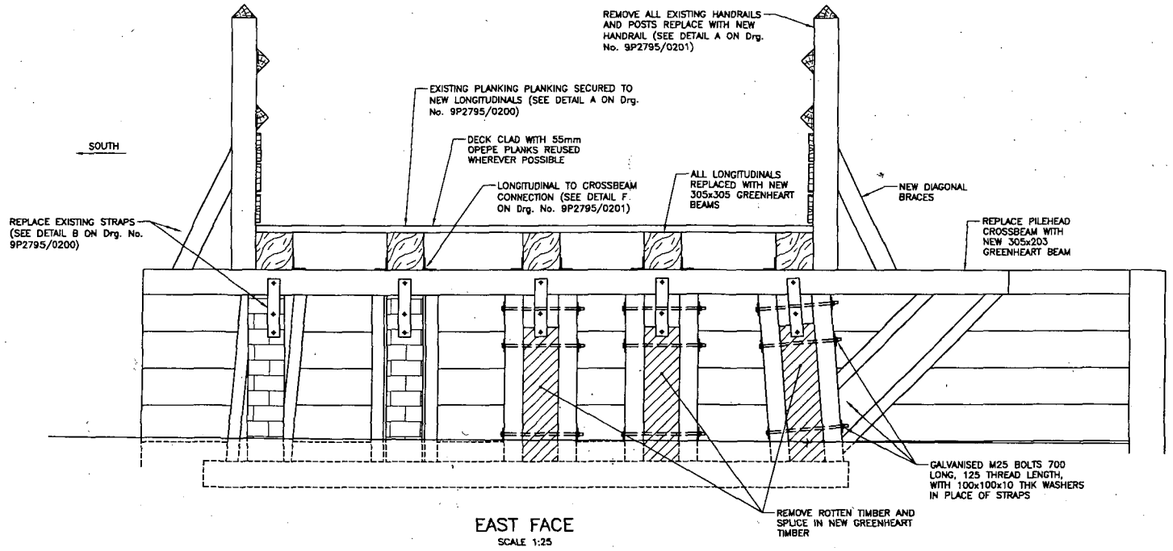
DRG No. 9P2795/0211 **DO NOT SCALE**



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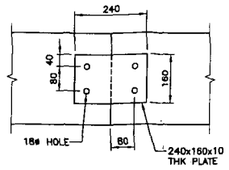

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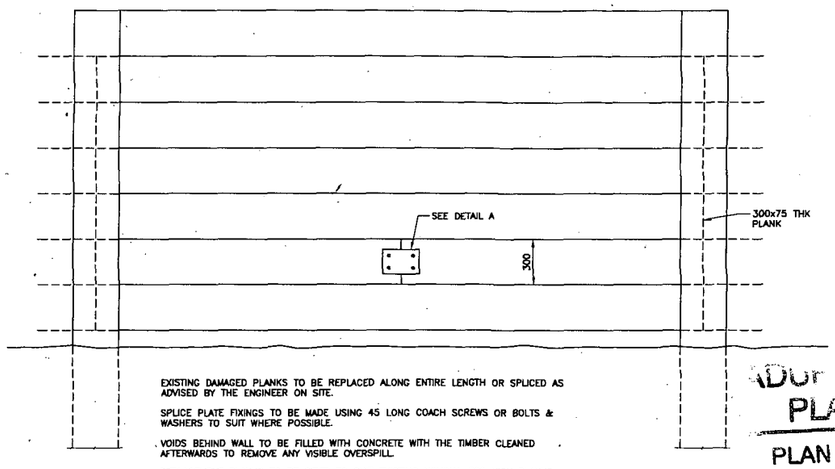

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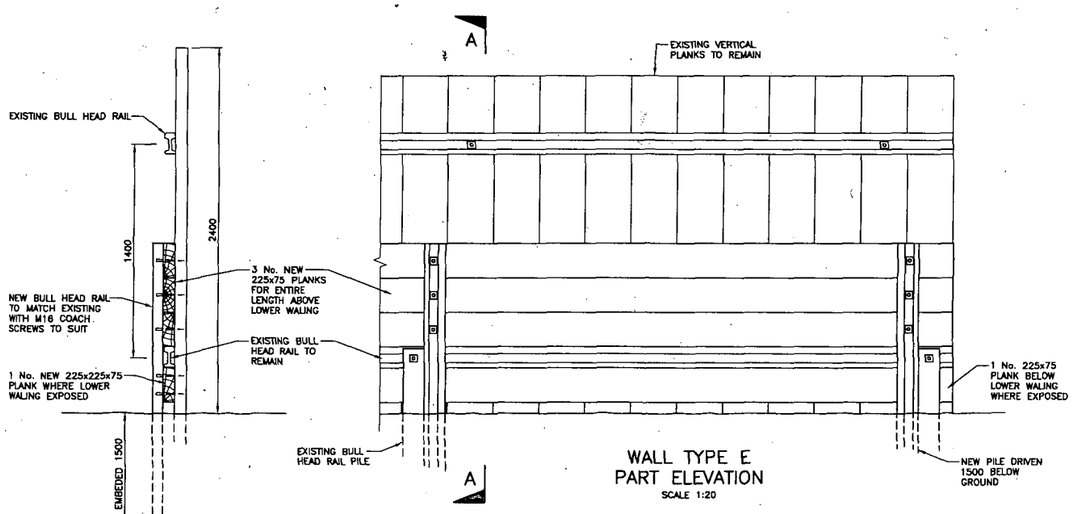
SPLICE PLATE FIXINGS TO BE MADE USING 45 LONG COACH SCREWS OR BOLTS & WASHERS TO SUIT WHERE POSSIBLE.

VOIDS BEHIND WALL TO BE FILLED WITH CONCRETE WITH THE TIMBER CLEANED AFTERWARDS TO REMOVE ANY VISIBLE OVERSPILL.

REPLACEMENT PLANKS TO BE SIZED TO SUIT EXISTING NOMINAL 300 HIGH PLANKS.

WALL TYPE C
PART ELEVATION
SCALE 1:20



WALL TYPE E
PART ELEVATION
SCALE 1:20

WALL TYPE E
SECTION A–A
SCALE 1:20

NOTES.

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
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8. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
9. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
10. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES FROM BOLT.
11. ALL COACH SCREWS TO BE M16 GALVANISED 110 LONG.
12. ALL DRILLED HOLES TO BE CLEANED OF SWARF TO ENSURE NO SPLITTING OF TIMBER WHEN BOLT OR COACH SCREW INSERTED/TIGHTENED.
13. FOR ALL COACH SCREW CONECTIONS THE HOLES DRILLED SHALL BE EQUAL IN DIAMETER TO THE UNTHREADED SHANK OF THE COACH SCREW FOR A DEPTH EQUAL TO THE LENGTH OF THE UNTHREADED SHANK AND THEN REDUCED IN DIAMETER, TO ENSURE A SECURE FIT, TO A TOTAL DEPTH OF 10mm GREATER THAN THE LENGTH OF THE COACH SCREW.
14. ALL BOLTS TO BE INSTALLED TO A DRIVING FIT UNLESS NOTED OTHERWISE.
15. HOLES FOR BOLTS IN PLATES/ANGLES TO BE 'STANDARD CLEARANCE HOLES' IN ACCORDANCE WITH BS5950 UNLESS NOTED OTHERWISE.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. AD 0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.08	CONSTRUCTION ISSUE	AIK	ARP	
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	SHW	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
WEST ABUTMENT ALTERATIONS

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Burns House
Harlands Road
Haywards Heath, RH16 1PG
+44 (0) 1444 458 551 Telephone
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info@royalhaskoning.com E-mail
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DRAWN	A.I.K	CHECKED	SHW	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	AS SHOWN	AUTOCAD REF.	9P2795-0211 & 0212		

DRAWING No. 9P2795/0211 REVISION A

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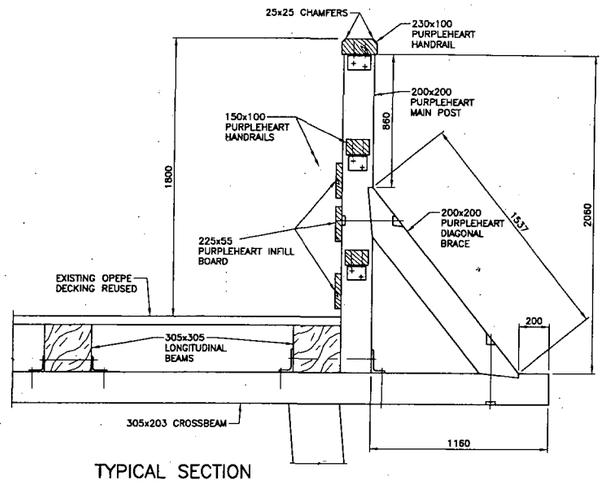
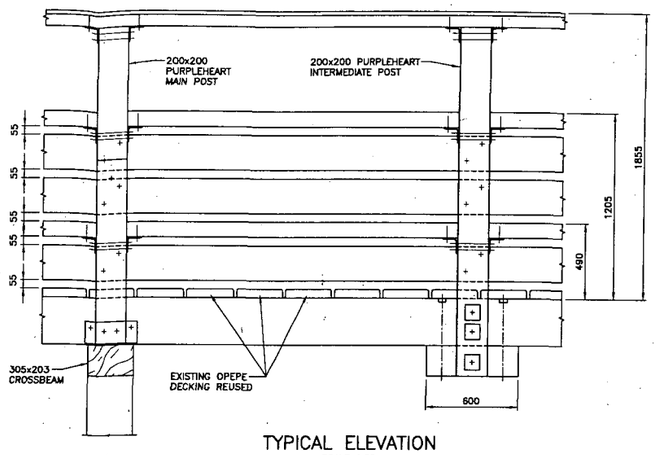
DRG No. 9P2795/0202 **DO NOT SCALE**

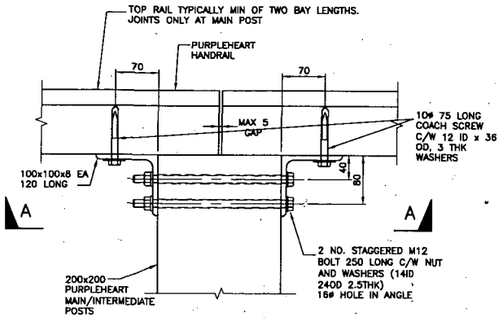


TYPICAL SECTION
SCALE 1:20

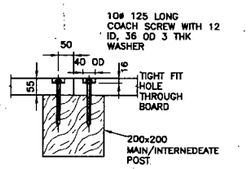


TYPICAL ELEVATION
SCALE 1:20

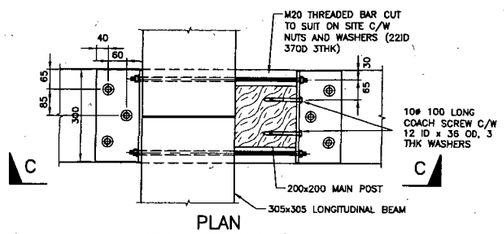
DETAIL H – NEW TIMBER HANDRAILING



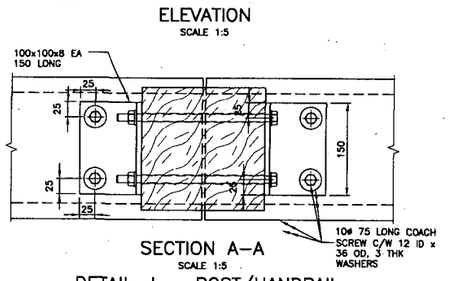
ELEVATION
SCALE 1:5



SECTION B–B
SCALE 1:10

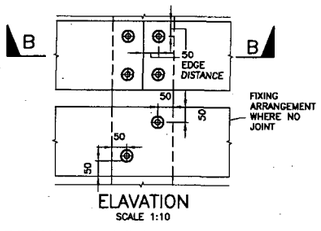


PLAN
DECKING OMITTED FOR CLARITY
SCALE 1:10



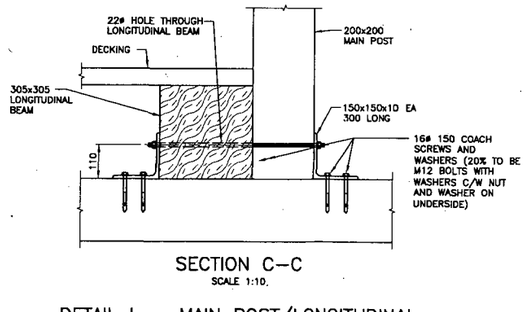
SECTION A–A
SCALE 1:5

DETAIL J – POST/HANDRAIL CONNECTION (TOP RAIL)



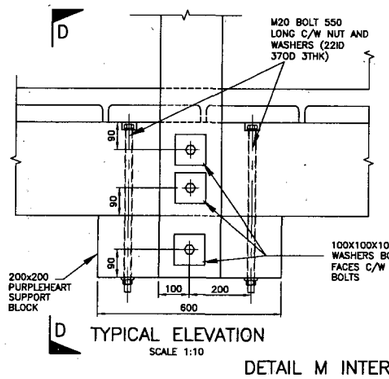
ELAVATION
SCALE 1:10

DETAIL K INFILL BOARD/POST CONNECTION

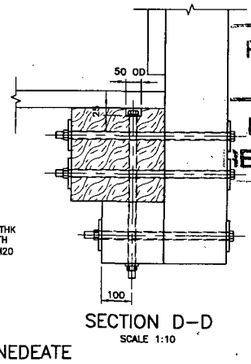


SECTION C–C
SCALE 1:10

DETAIL L – MAIN POST/LONGITUDINAL BEAM CONNECTION

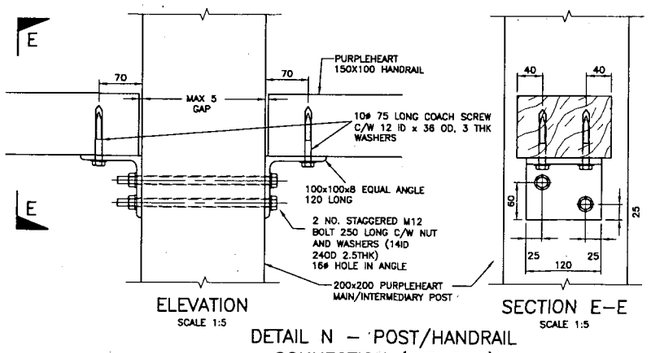


TYPICAL ELEVATION
SCALE 1:10



SECTION D–D
SCALE 1:10

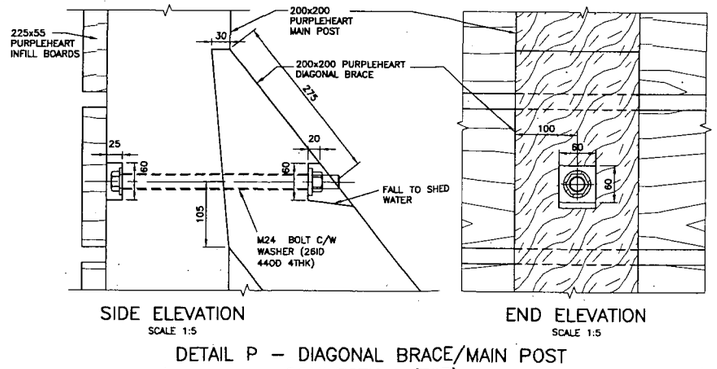
DETAIL M INTERNEDEATE POST/LONGITUDINAL BEAM CONECTION



ELEVATION
SCALE 1:5

SECTION E–E
SCALE 1:5

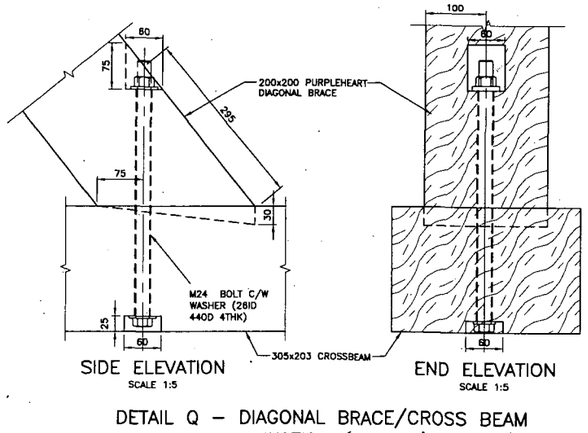
DETAIL N – POST/HANDRAIL CONNECTION (MID RAIL)



SIDE ELEVATION
SCALE 1:5

END ELEVATION
SCALE 1:5

DETAIL P – DIAGONAL BRACE/MAIN POST CONNECTION (TOP)



SIDE ELEVATION
SCALE 1:5

END ELEVATION
SCALE 1:5

DETAIL Q – DIAGONAL BRACE/CROSS BEAM CONNECTION (BOTTOM)

NOTES.

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. PLATES ETC. TO BE GRADE S275 STEEL, BOLTS TO BE GRADE 8.8, BLACK TO BS 4190, NUTS TO BE GRADE 8.
4. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANIZED TO BS EN ISO 1460.
5. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
6. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
7. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
8. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628–2 TO APPLY TO EDGE DISTANCES FROM BOLT.
9. ALL BOLTS TO HAVE MINIMUM 2 THREADS CLEAR WHEN TIGHTENED
10. ALL DRILLED HOLES TO BE CLEANED OF SWARF TO ENSURE NO SPLITTING OF TIMBER WHEN BOLT OR COACH SCREW INSERTED/TIGHTENED.
11. FOR ALL COACH SCREW CONECTIONS THE HOLES DRILLED SHALL BE EQUAL IN DIAMETER TO THE UNTHREADED SHANK OF THE COACH SCREW FOR A DEPTH EQUAL TO THE LENGTH OF THE UNTHREADED SHANK AND THEN REDUCED IN DIAMETER, TO ENSURE A SECURE FIT, TO A TOTAL DEPTH OF 10mm GREATER THAN THE LENGTH OF THE COACH SCREW.
12. ALL HANDRAILING AND ASSOCIATED TIMBERS TO HAVE ROUNDED CORNERS WITH MAX. RADIUS OF 5mm. TIMBERS TO BE FREE FROM SPLINTERS.
13. ALL BOLTS TO BE INSTALLED TO A DRIVING FIT UNLESS NOTED OTHERWISE.
14. HOLES FOR BOLTS IN PLATES/ANGLES TO BE 'STANDARD CLEARANCE HOLES' IN ACCORDANCE WITH BS5950 UNLESS NOTED OTHERWISE.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT REPORT.

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. AD 0032/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
B	08.06	CONNECTIONS REVISED	SRS		
A	03.06	CONSTRUCTION ISSUE	AIK		
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	SJR	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
HANDRAILING DETAILS

A brand of ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Burns House
Harlands Road
Haywards Heath, RH16 1PG
Telephone +44 (0) 1444 458 551
Fax +44 (0) 1444 440 995
E-mail info@royalhaskoning.com
Internet www.royalhaskoning.com

DRAWN	A.I.K	CHECKED	SJR	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	AS SHOWN	AUTOCAD REF.	9P2795–0200 – 0202		
DRAWING No.	9P2795/0202	REVISION	B		

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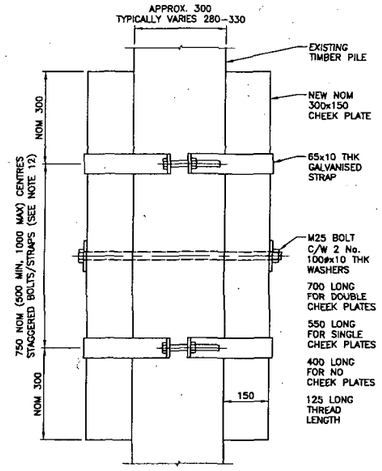
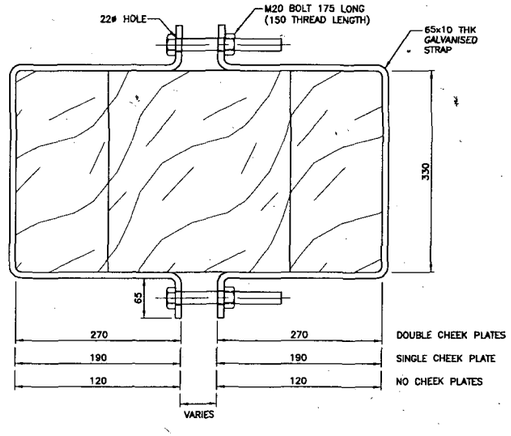
DRG No. 9P2795/0201 **DO NOT SCALE**

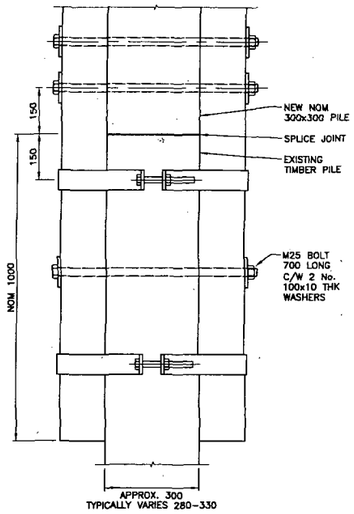


ELEVATION
SCALE 1:10



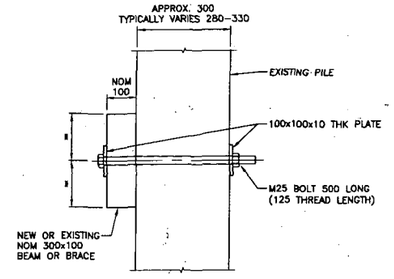
PLAN
SCALE 1:5

DETAIL C – CHEEK PLATES

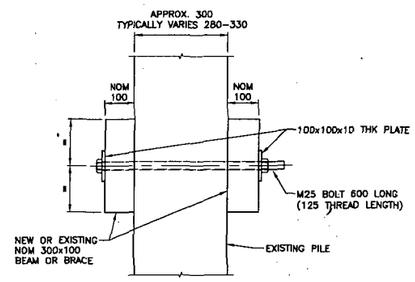


ELEVATION WITH SPLICE
SCALE 1:10

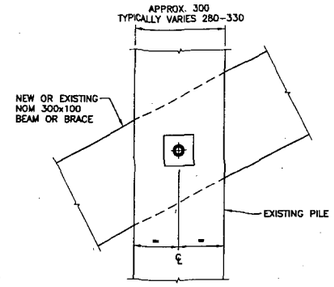
DETAIL D – SPLICE CONNECTION



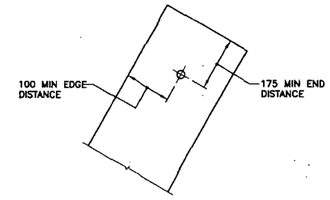
TWO TIMBERS
SCALE 1:10



THREE TIMBERS
SCALE 1:10



TYPICAL ELEVATION
SCALE 1:10



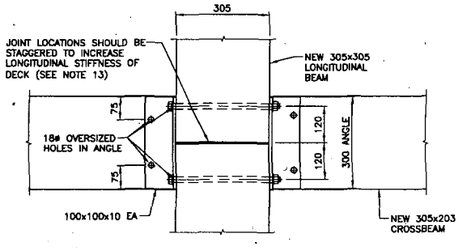
EDGE DISTANCES FOR A M25 BOLT
SCALE 1:10

DETAIL E – BEAM & BRACE CONNECTIONS

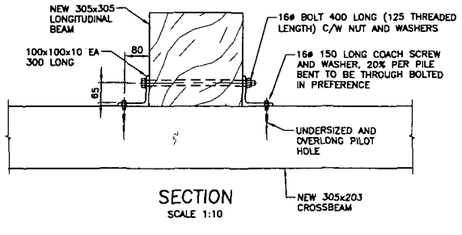
NOTES.

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. PLATES ETC. TO BE GRADE S275 STEEL, BOLTS TO BE GRADE 8.8, BLACK TO BS 4190, NUTS TO BE GRADE 8.
4. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460.
5. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
6. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
7. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
8. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES FROM BOLT.
9. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING. NO PACKING PIECES PERMITTED.
10. ALL BOLTS TO BE INSTALLED TO A DRIVING FIT.
11. FOR DECKING COACH SCREWS ALLOW SETTLING IN PERIOD UNTIL THE COMPLETION OF THE JOB WHEN THEY SHOULD RECEIVE A FINAL TIGHTENING BEFORE FILLING THE HOLE WITH BITUMEN.
12. MINIMUM TWO STRAPS AND ONE BOLT ON CHEEK PLATE CONNECTIONS.
13. NEW LONGITUDINAL BEAMS TYPICALLY TO SPAN 3 PILE HEADS, JOINT LOCATIONS TO BE STAGGERED.
14. ALL DRILLED HOLES TO BE CLEANED OF SWARF TO ENSURE NO SPLITTING OF TIMBER WHEN BOLT OR COACH SCREW INSERTED/TIGHTEND.
15. FOR ALL COACH SCREW CONNECTIONS THE HOLES DRILLED SHALL BE EQUAL IN DIAMETER TO THE UNTHREADED SHANK OF THE COACH SCREW FOR A DEPTH EQUAL TO THE LENGTH OF THE UNTHREADED SHANK AND THEN REDUCED IN DIAMETER, TO ENSURE A SECURE FIT, TO A TOTAL DEPTH OF 10mm GREATER THAN THE LENGTH OF THE COACH SCREW.
16. ALL BOLTS TO BE INSTALLED TO A DRIVING FIT UNLESS NOTED OTHERWISE.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

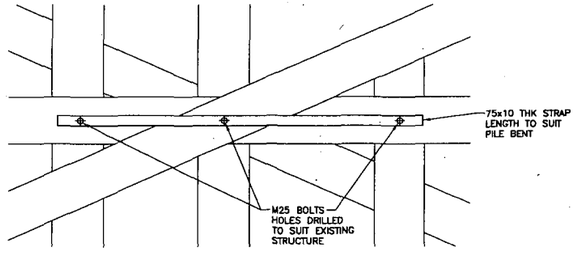


PLAN
SCALE 1:10



SECTION
SCALE 1:10

DETAIL F – LONGITUDINAL BEAM TO CROSS BEAM CONNECTION



TYPICAL ELEVATION
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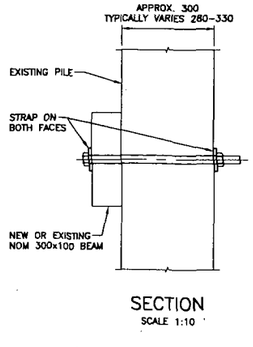

SECTION
SCALE 1:10

DETAIL G – SUPPORT STRAP

DUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. A/DC/03210/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AJK	SJR	
0	12.05	DETAILED DESIGN – EH REVIEW	AJK	SJR	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
TIMBER CONNECTION DETAILS SHEET 2 OF 2

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+44 (0) 1444 440 866 Fax
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www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	SJR	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	AS SHOWN	AUTOCAD REF.	9P2795-0200 -. 0202		
DRAWING No.	9P2795/0201	REVISION	A		

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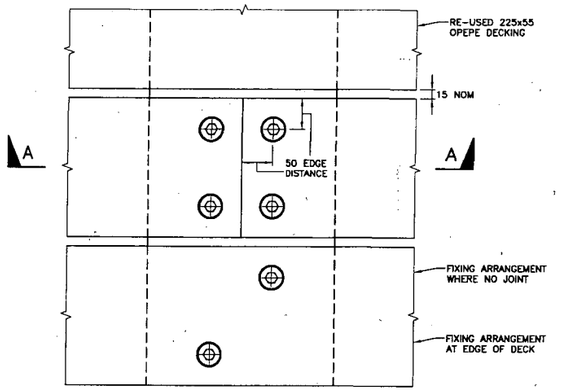
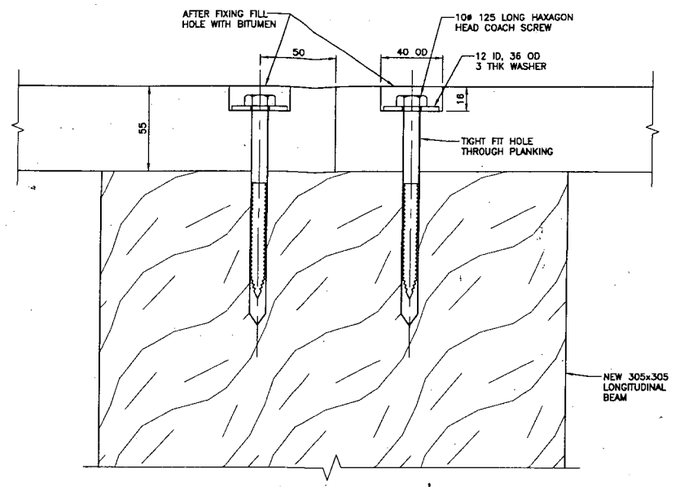
DRG No. 9P2795/0200 **DO NOT SCALE**



PLAN
SCALE 1:5



SECTION A–A
SCALE 1:2

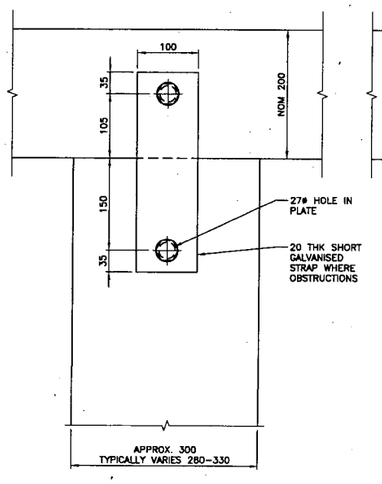
DETAIL A – DECKING COACH SCREW FIXING

NOTES.

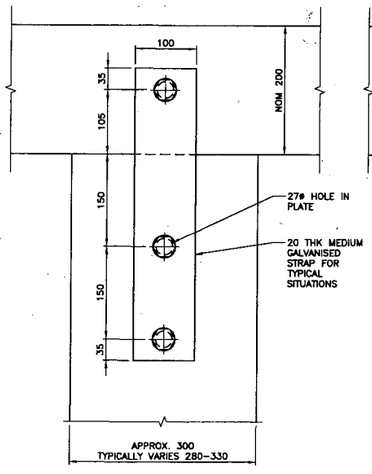
1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. PLATES ETC. TO BE GRADE S275 STEEL, BOLTS TO BE GRADE 8.8, BLACK TO BS 4190, NUTS TO BE GRADE 8.
4. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460.
5. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
6. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
7. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
8. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628–2 TO APPLY TO EDGE DISTANCES FROM BOLT.
9. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING. NO PACKING PIECES PERMITTED.
10. ALL BOLTS TO BE INSTALLED TO A DRIVING FIT UNLESS NOTED OTHERWISE.
11. FOR DECKING COACH SCREWS ALLOW SETTLING IN PERIOD UNTIL THE COMPLETION OF THE JOB WHEN THEY SHOULD RECEIVE A FINAL TIGHTENING BEFORE FILLING THE HOLE WITH BITUMEN.
12. ALL DRILLED HOLES TO BE CLEANED OF SWARF TO ENSURE NO SPLITTING OF TIMBER WHEN BOLT OR COACH SCREW INSERTED/TIGHTEND.
13. FOR ALL COACH SCREW CONECTIONS THE HOLES DRILLED SHALL BE EQUAL IN DIAMETER TO THE UNTHREADED SHANK OF THE COACH SCREW FOR A DEPTH EQUAL TO THE LENGTH OF THE UNTHREADED SHANK AND THEN REDUCED IN DIAMETER, TO ENSURE A SECURE FIT, TO A TOTAL DEPTH OF 10mm GREATER THAN THE LENGTH OF THE COACH SCREW.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT REPORT V1.1

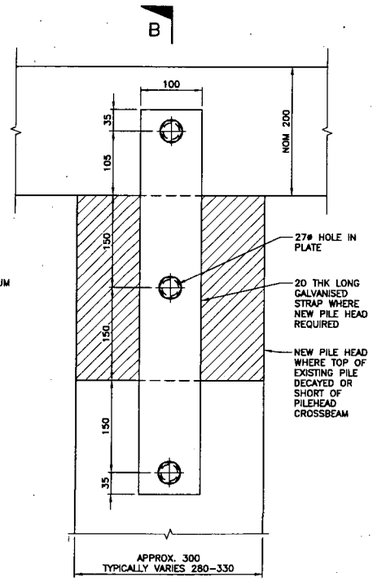
ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. AWO321/07
DATE RECEIVED 29 MAY 2007



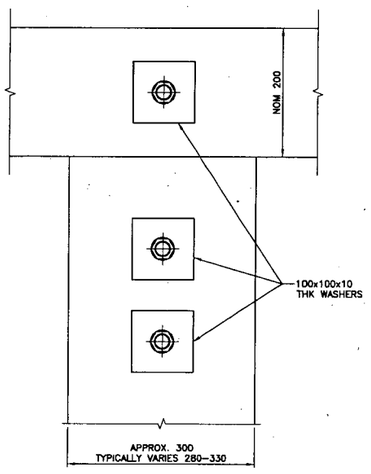
ELEVATION ON WEST FACE
SCALE 1:5



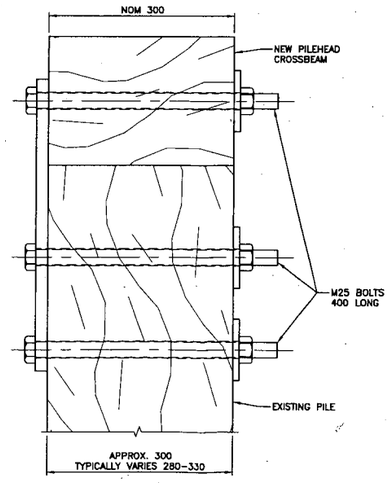
ELEVATION ON WEST FACE
SCALE 1:5



ELEVATION ON WEST FACE
SCALE 1:5



ELEVATION ON EAST FACE
SCALE 1:5



SECTION B–B
SCALE 1:5

DETAIL B – PILEHEAD CONNECTION

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AIK	RJG	
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
TIMBER CONNECTION DETAILS SHEET 1 OF 2

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Burns House
Harlands Road
Haywards Heath, RH16 1PG
Telephone +44 (0) 1444 458 551
Fax +44 (0) 1444 440 885
E-mail info@royalhaskoning.com
Internet www.royalhaskoning.com

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	AS SHOWN	AUTOCAD REF.	9P2795-0200 – 0202		

DRAWING No. 9P2795/0200
REVISION A

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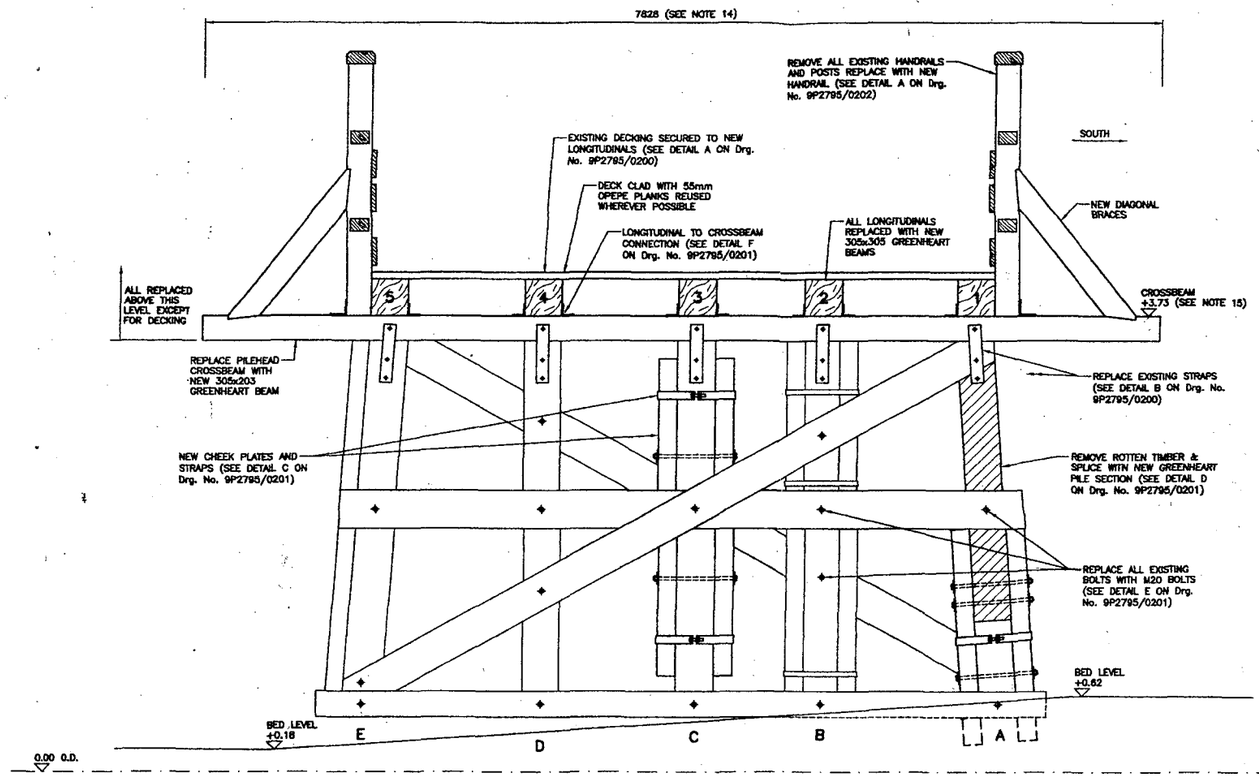
DRG No. 9P2795/0122 **DO NOT SCALE**



PILE BENT No. 26

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
13. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING, PACKING PIECES NOT PERMITTED.
14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
16. TOPS OF PILES TO BE SOUND AND TO HAVE FULL CONTACT WITH CROSSBEAM. DECAYED OR SHORT PILES TO BE TRIMMED DOWN AND TOPS REPLACED WITH NEW PILE HEADS.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT REPORT V.1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION

PLAN No. AD/0321/07

DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.08	CONSTRUCTION ISSUE	AIK	EXC	APP
0	12.06	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS PILE BENT 26

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Burns House
Harlequin Road
Haywards Heath, RH16 1PG
Telephone +44 (0) 1444 458 551
Fax +44 (0) 1444 440 895
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Internet www.royalhaskoning.com

DRAWN	A.I.K	CHECKED	RJG
PASSED	ARP		
DATE	Dec. 2005	CLIENT'S REF.	
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0122
DRAWING No.	9P2795/0122	REVISION	A

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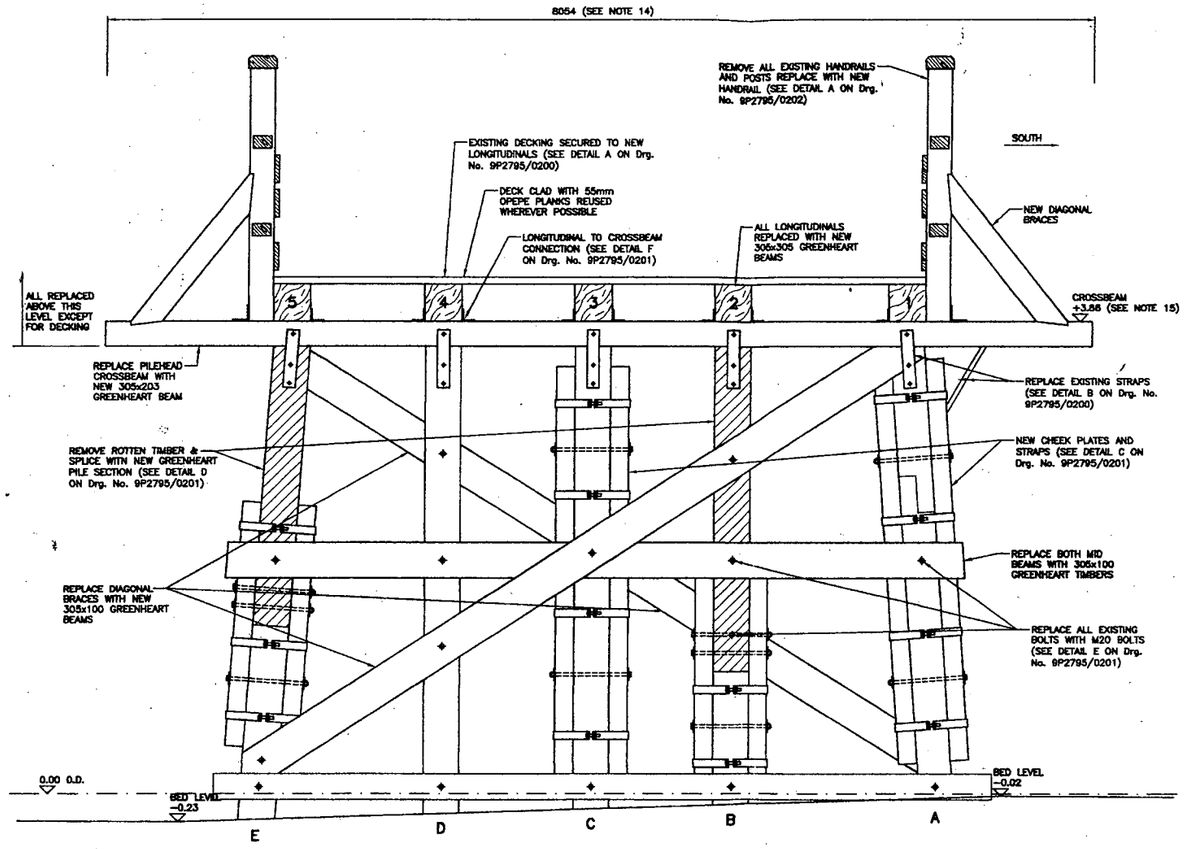
DRG No. 9P2795/0121 **DO NOT SCALE**



PILE BENT No. 25

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. AD/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AIK	RJG/ARP	
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS PILE BENT 25

ROYAL HASKONING
HASKONING UK LTD
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Rijnhaven House
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+31 (0) 10 286 36 00
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www.royalhaskoning.com
Telephone
Fax
E-mail
Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0121		
DRAWING No.	9P2795/0121	REVISION	A		

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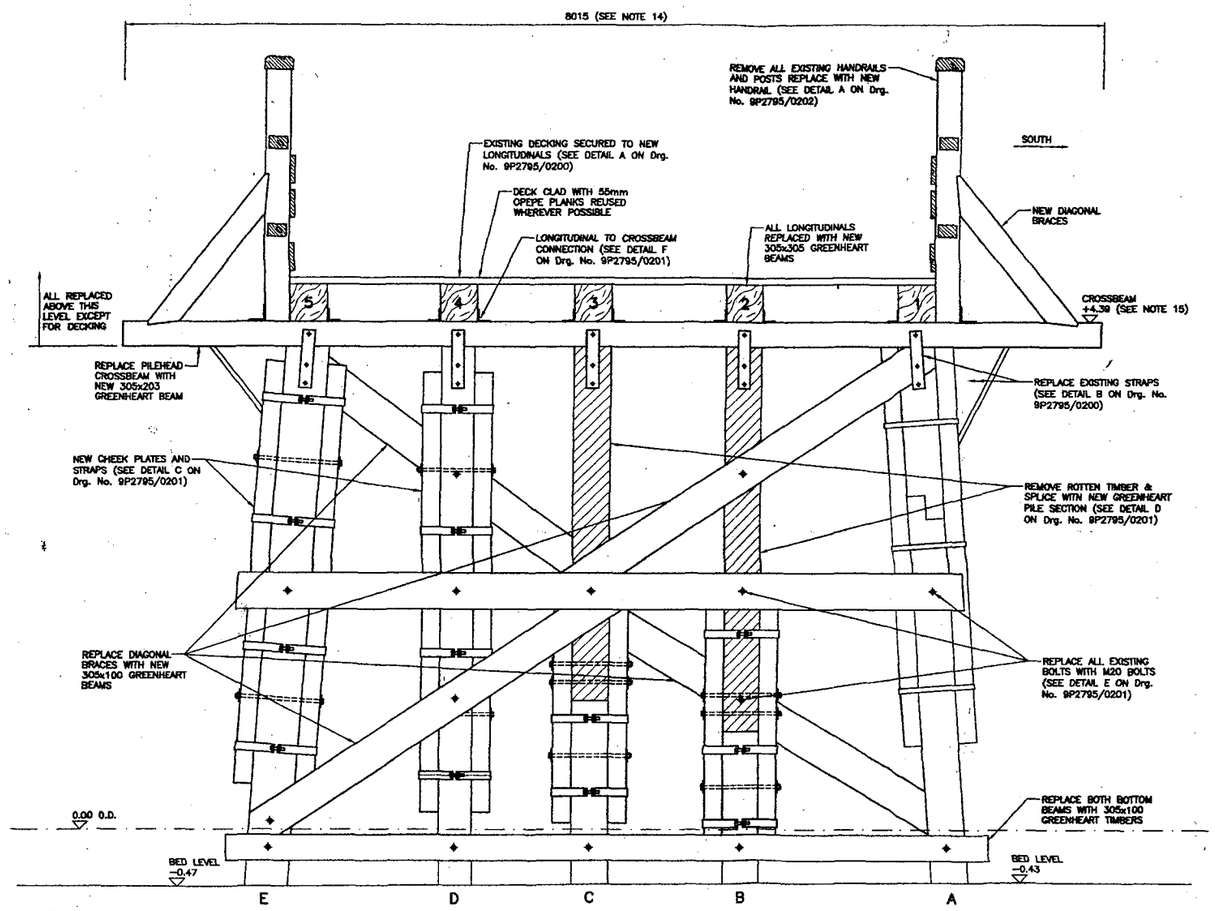
DRG No. 9P2795/0120 **DO NOT SCALE**



PILE BENT No. 24

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
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9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT (REPORT) V1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. ADC/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	ABK	RJG	ARP
0	12.05	DETAILED DESIGN – EH REVIEW	ABK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS PILE BENT 24

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rightwater House
Horsham Road
Rowhook Heath, RH19 3PD
+44 (0) 1444 464 851 Telephone
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info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0120		
DRAWING No.	9P2795/0120	REVISION	A		

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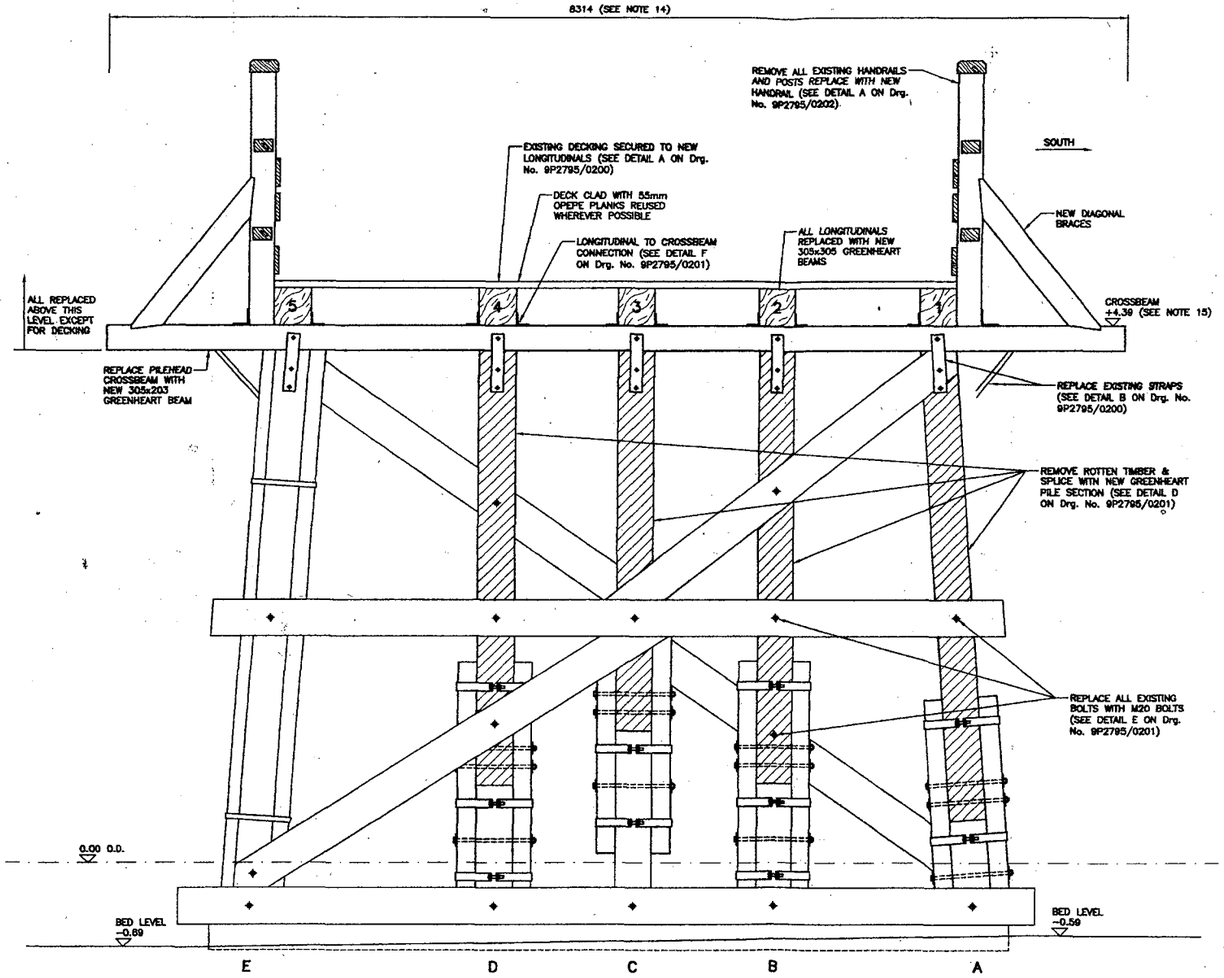
DRG No. 9P2795/0119 **DO NOT SCALE**



PILE BENT No. 23

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. AD/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AIK	RJG	APL
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS PILE BENT 23

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rums House
Hastoods Road
Haywards Heath, RH16 1PQ
+44 (0) 1444 458 551 Telephone
+44 (0) 1444 440 889 Fax
info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0119		

DRAWING No. 9P2795/0119 REVISION A

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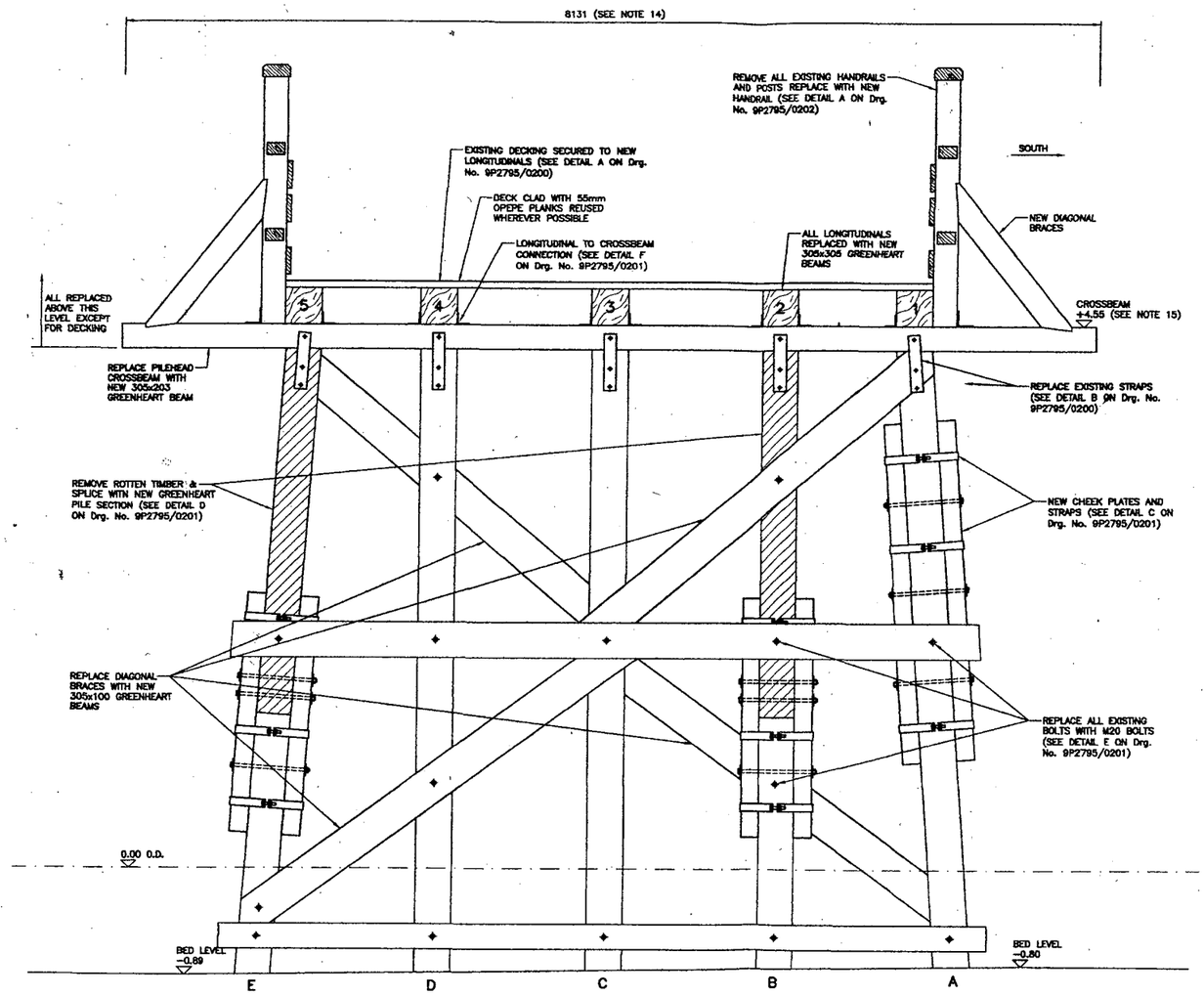

PILE BENT No. 22

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING *FOCUSES UPON* LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYM, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT, DESIGN STATEMENT, REPORT V.1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. adc0821/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AIK	RJG	
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS
PILE BENT 22

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rightwell House
Bush Road
Rochester, Kent ME1 1RG
Telephone +44 (0) 1634 821 800
Fax +44 (0) 1634 821 801
E-mail info@royalhaskoning.com
Internet www.royalhaskoning.com

DRAWN	A.I.K	CHECKED	RJG
DATE	Dec. 2005	CLIENT'S REF.	
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0118
DRAWING No.	9P2795/0118	REVISION	A

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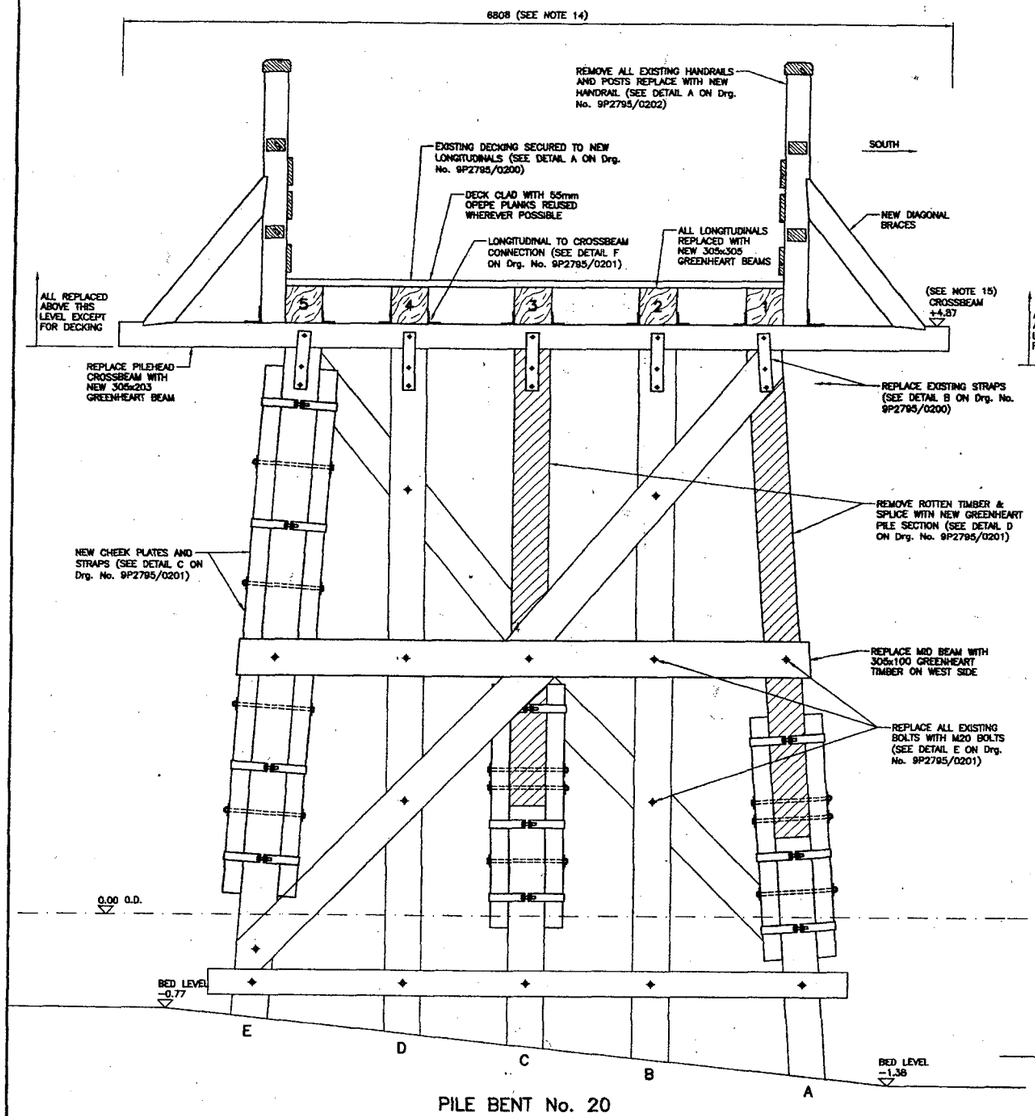
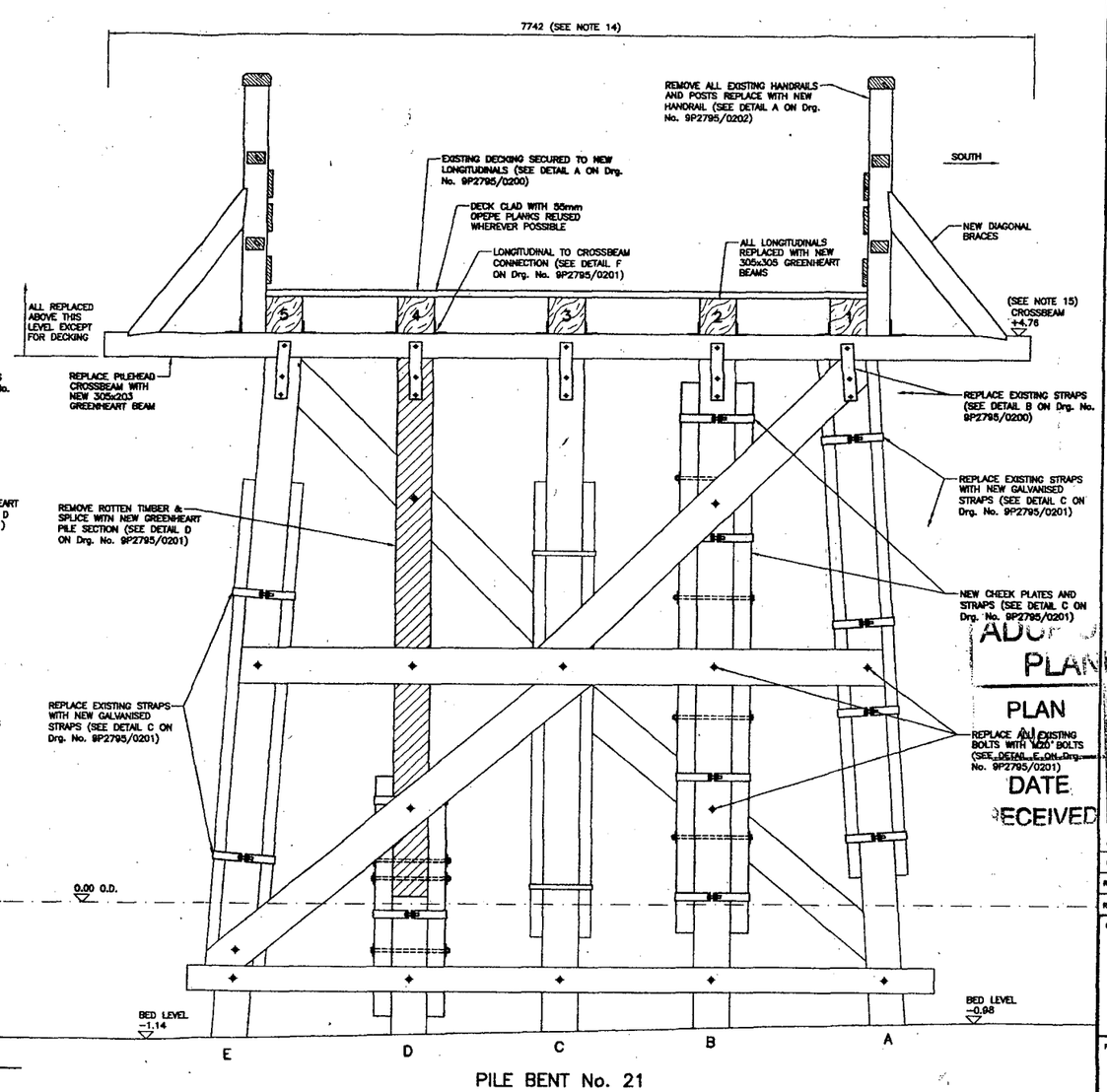
DRG No. 9P2795/0117 **DO NOT SCALE**



PILE BENT No. 20



PILE BENT No. 21

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN
ADC032/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.05	CONSTRUCTION ISSUE	AIK	RJG	ARP
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS PILE BENTS 20 & 21

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rightwell House
Bush Road
Haywards Heath, RH16 1PQ
+44 (0) 1444 458 551 Telephone
+44 (0) 1444 440 205 Fax
info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0117		

DRAWING No. 9P2795/0117 REVISION A

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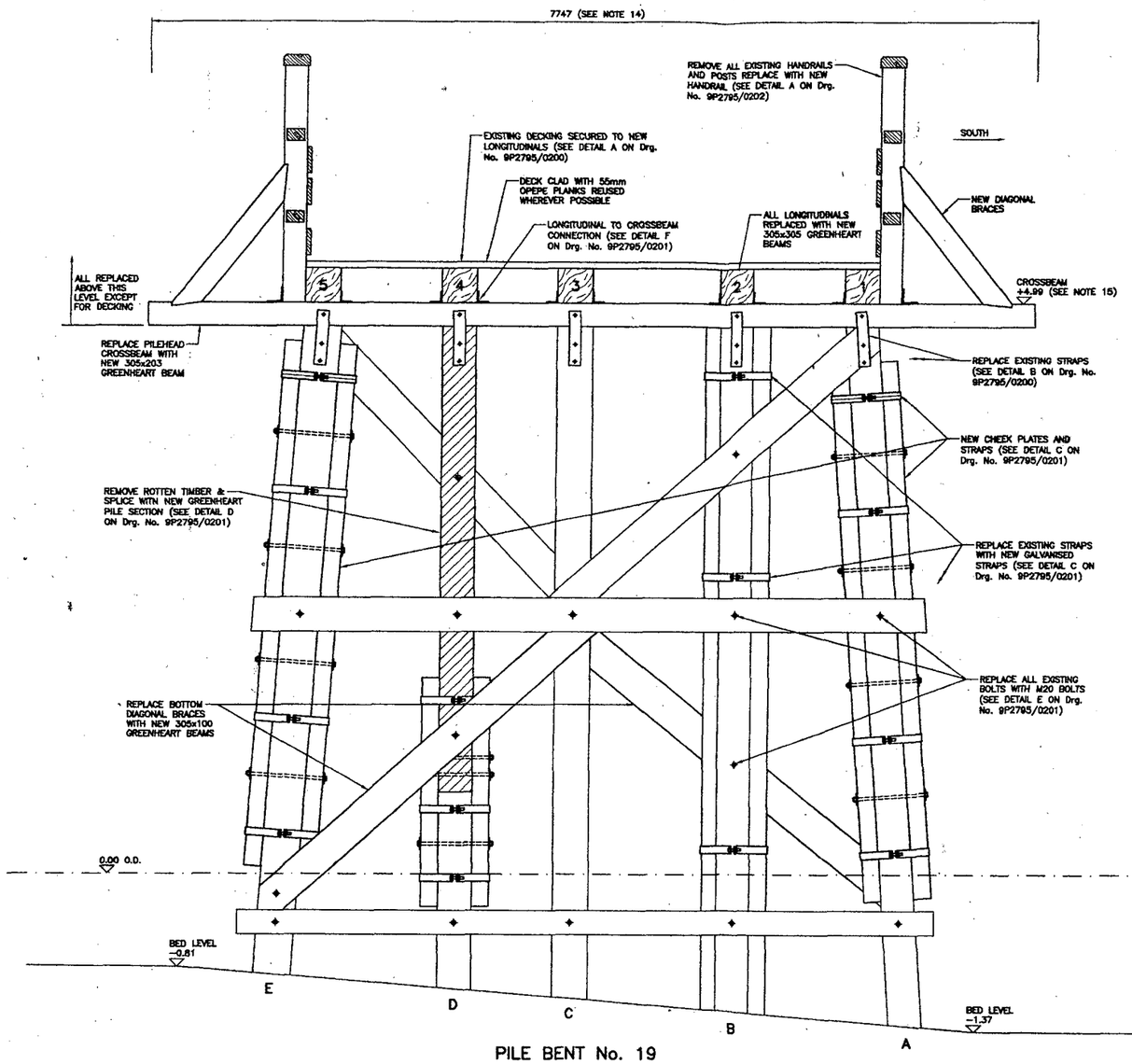
DRG No. 9P2795/0116 **DO NOT SCALE**



PILE BENT No. 19

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
13. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING, PACKING PIECES NOT PERMITTED.
14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
16. TOPS OF PILES TO BE SOUND AND TO HAVE FULL CONTACT WITH CROSSBEAM. DECAYED OR SHORT PILES TO BE TRIMMED DOWN AND TOPS REPLACED WITH NEW PILE HEADS.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT REPORT V.1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. AWDC/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.05	CONSTRUCTION ISSUE	AIK	RJG	ARP
0	12.04	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS PILE BENT 19

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rightwell House
Bush Road
Heywards Heath, RH16 1PG
+44 (0) 1444 458 551 Telephone
+44 (0) 1444 440 866 Fax
info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0116		
DRAWING No.	9P2795/0116			REVISION	A

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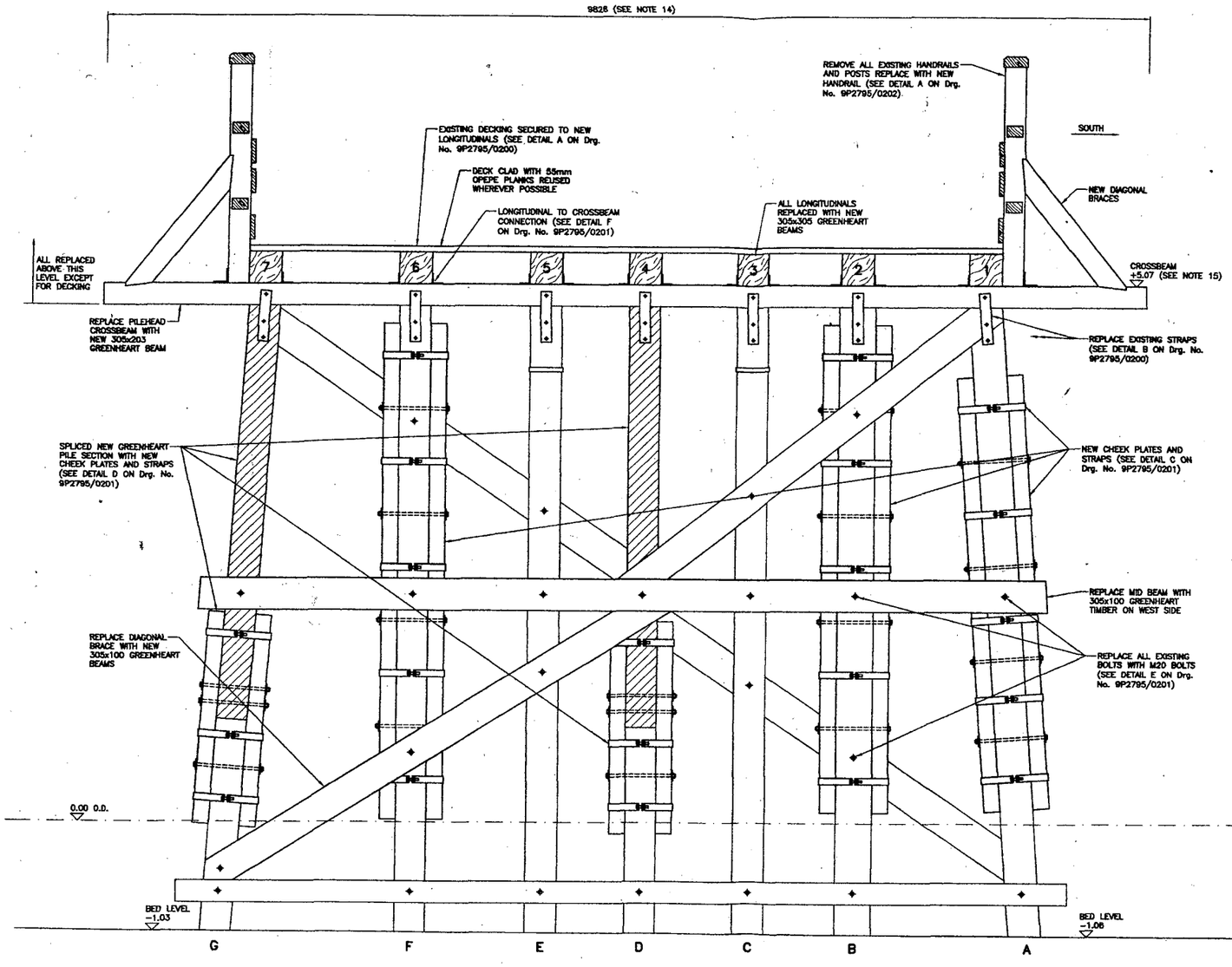
ORG No. 9P2795/0115 **DO NOT SCALE**



PILE BENT No. 18

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE, REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628–2 TO APPLY TO EDGE DISTANCES TO BOLTS.
13. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING, PACKING PIECES NOT PERMITTED.
14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
16. TOPS OF PILES TO BE SOUND AND TO HAVE FULL CONTACT WITH CROSSBEAM. DECAYED OR SHORT PILES TO BE TRIMMED DOWN AND TOPS REPLACED WITH NEW PILE HEADS.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1:4

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. ADC0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	CONSTRUCTION ISSUE	ABK	RJG
A	03.06			
0	12.05	DETAILED DESIGN – EH REVIEW	ABK	RJG
REV	DATE	DESCRIPTION	BY	CHK APP

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS
PILE BENT 18

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Burns House
Harlands Road
Haywards Heath, RH16 1PG
+44 (0) 1444 458 551 Telephone
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info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795–0115		

DRAWING No. 9P2795/0115 REVISION A

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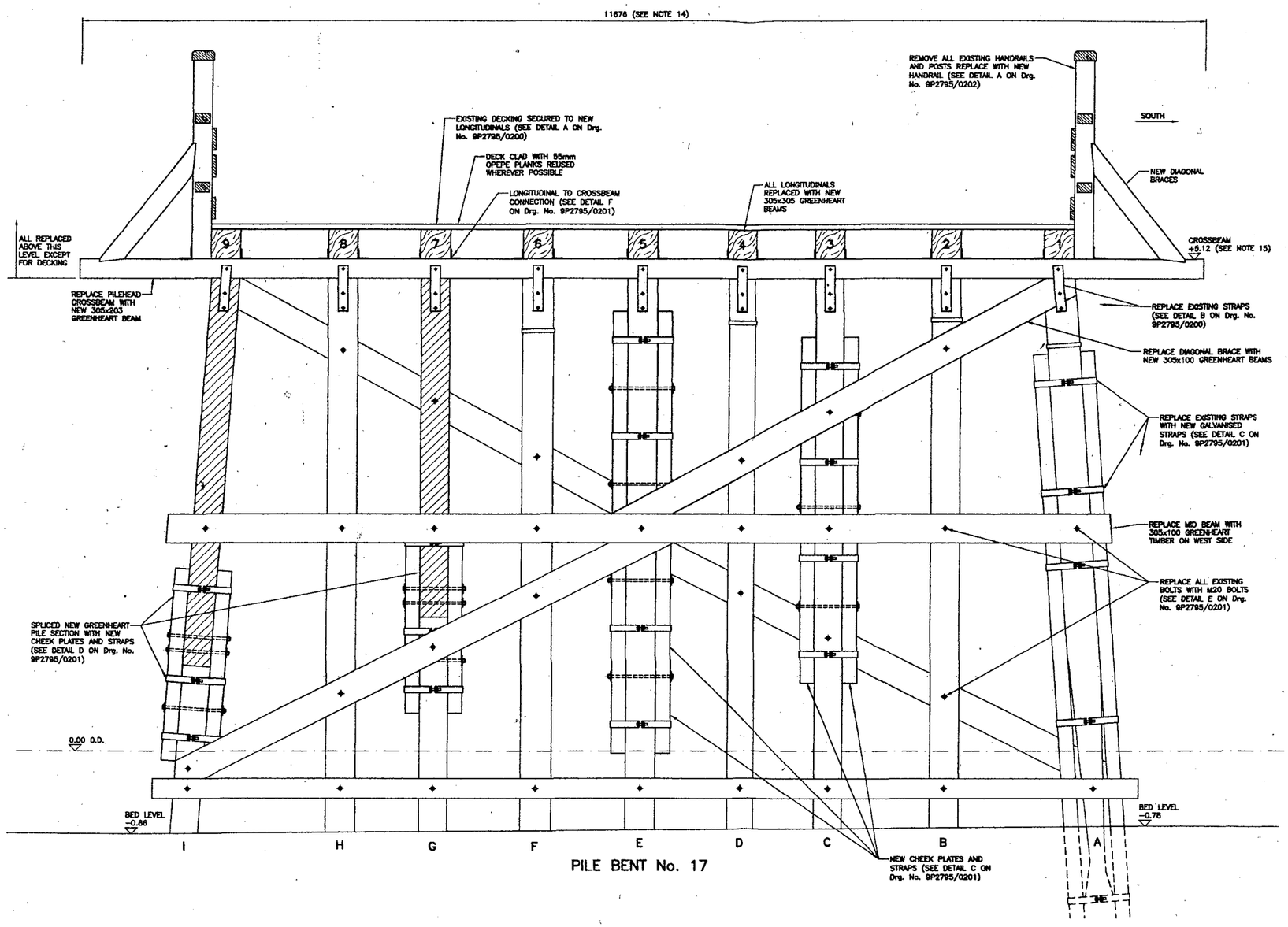
DRG No. 9P2795/0114 **DO NOT SCALE**



PILE BENT No. 17

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
13. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING, PACKING PIECES NOT PERMITTED.
14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION

PLAN No. ADC0321/07

DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AIK	RJG	ARP
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS
PILE BENT 17

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rightwell House
Bush Road
Rochester, ME1 1PG
+44 (0) 1444 458 551
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E-mail
Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0114		

DRAWING No. 9P2795/0114 REVISION A

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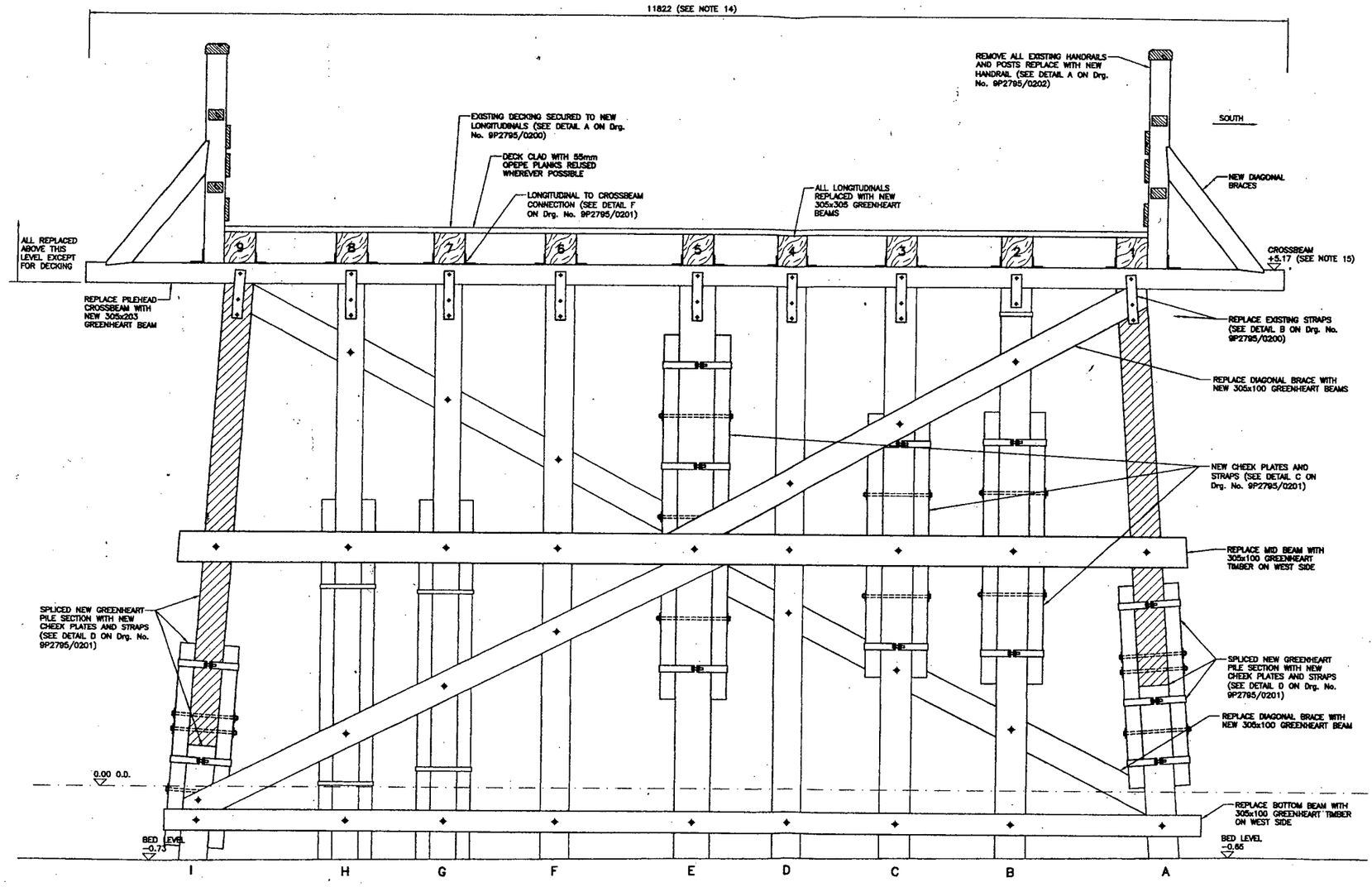

PILE BENT No. 16

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1480. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. AD/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AIK	RJG	
0	10.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS
PILE BENT 16

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rams House
Harbrook Road
Haywards Heath, RH16 1PG
+44 (0) 1444 458 551 Telephone
+44 (0) 1444 440 605 Fax
info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG
PASSED	ARP		
DATE	Dec. 2005	CLIENT'S REF.	
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0113
DRAWING No.	9P2795/0113	REVISION	A

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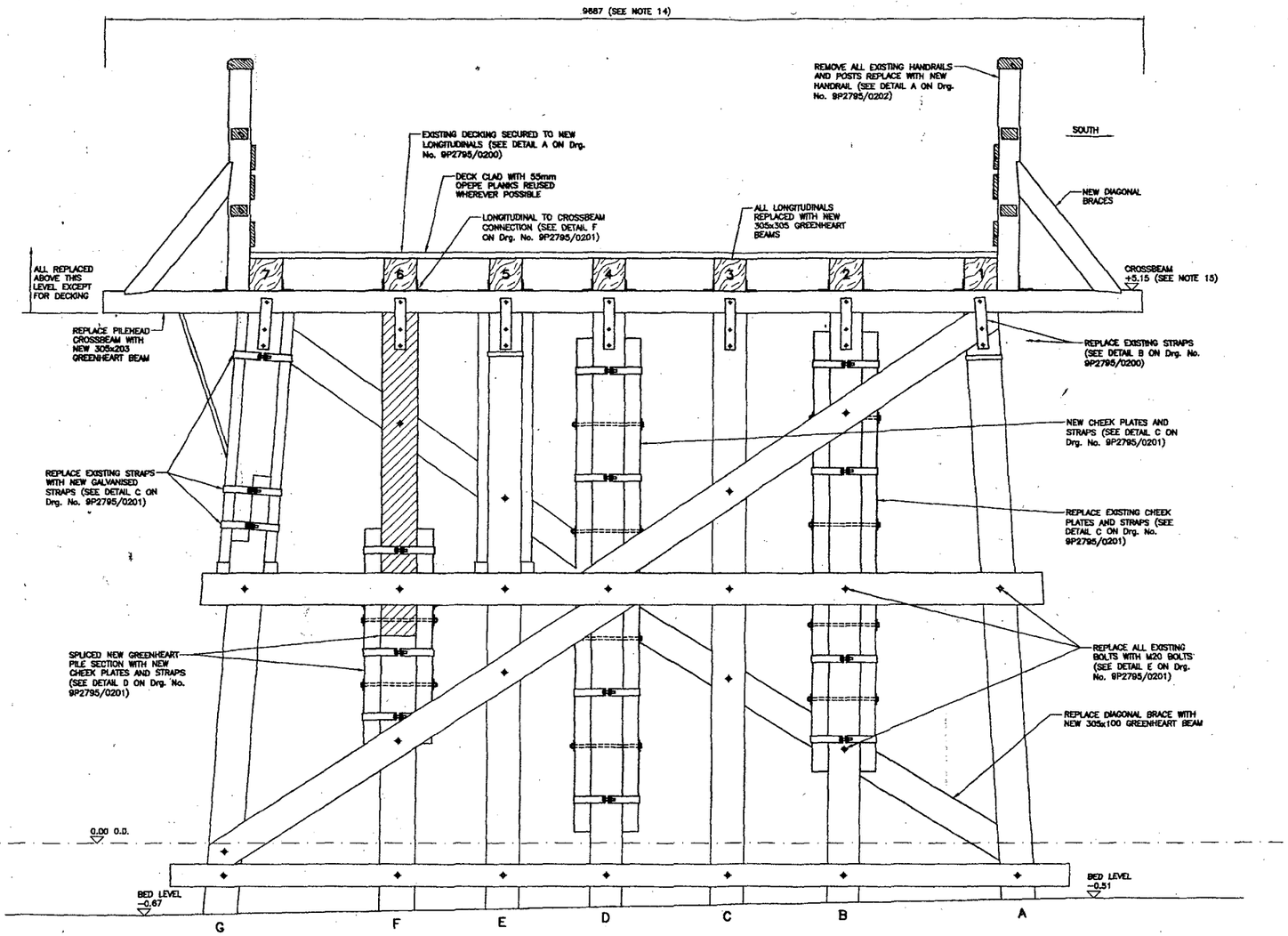

PILE BENT No. 15

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/NAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED. WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
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14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
16. TOPS OF PILES TO BE SOUND AND TO HAVE FULL CONTACT WITH CROSSBEAM. DECAYED OR SHORT PILES TO BE TRIMMED DOWN AND TOPS REPLACED WITH NEW PILE HEADS.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. AD/0321/07
DATE RECEIVED 23 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AIK	RJG	ARP
0	12.05	DETAILED DESIGN – EA REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS
PILE BENT 15

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rums House
Harbeds Road
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+44 (0) 1444 458 551
+44 (0) 1444 440 985
info@royalhaskoning.com
www.royalhaskoning.com
Telephone
Fax
E-mail
Internet

DRAWN	A.I.K	CHECKED	RJG
PASSED	ARP		
DATE	Dec. 2005	CLIENT'S REF.	
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0112
DRAWING No.	9P2795/0112	REVISION	A

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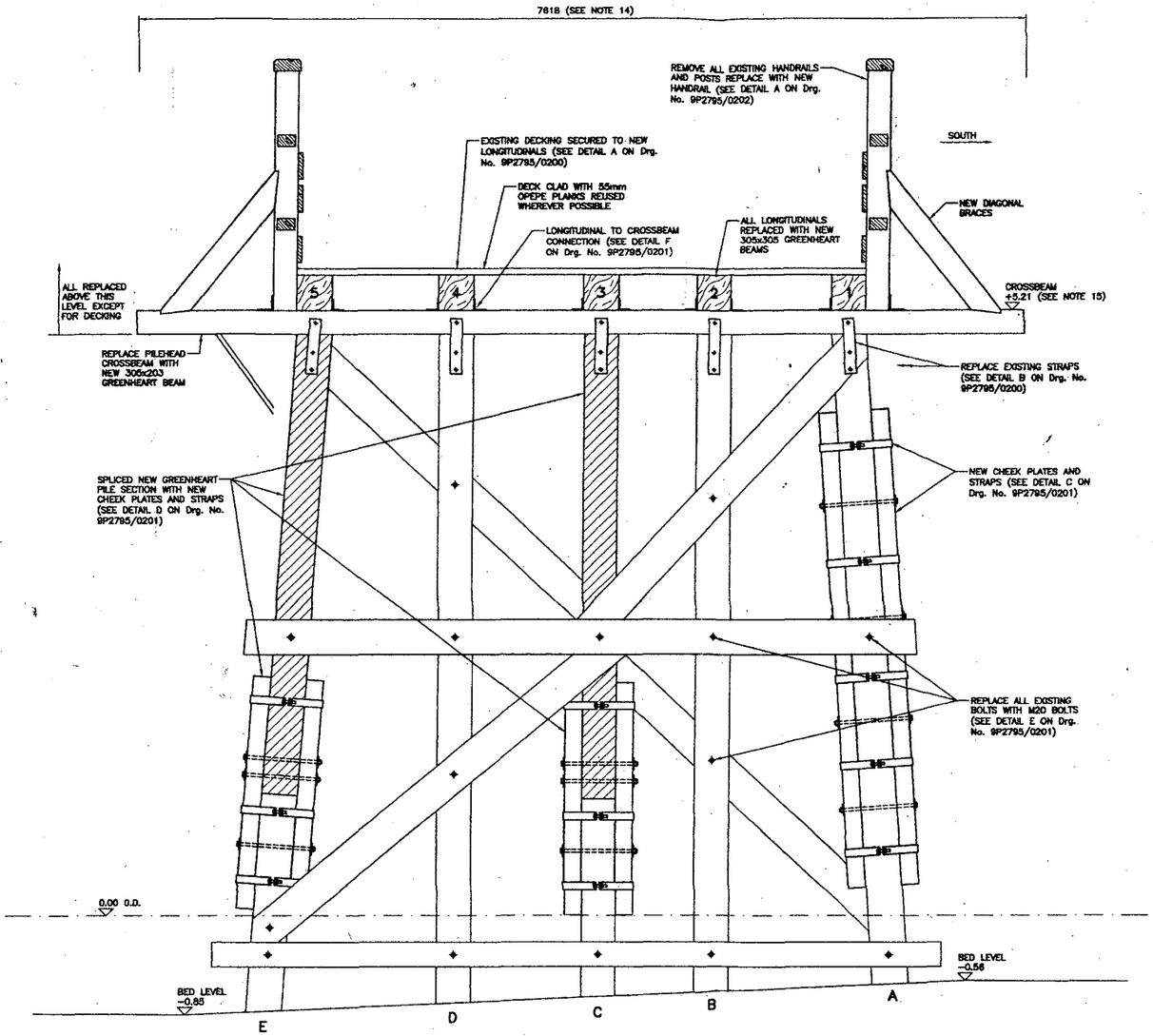
DRG No. 9P2795/0111 **DO NOT SCALE**



PILE BENT No. 14

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
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14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
16. TOPS OF PILES TO BE SOUND AND TO HAVE FULL CONTACT WITH CROSSBEAM. DECAYED OR SHORT PILES TO BE TRIMMED DOWN AND TOPS REPLACED WITH NEW PILE HEADS.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION
PLAN No. ADC/0921/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.08	CONSTRUCTION ISSUE	AIK	RJG	ARP
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS PILE BENT 14

ROYAL HASKONING
HASKONING UK LTD
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+44 (0) 1444 440 666 Fax
info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0111		
DRAWING No.	9P2795/0111			REVISION	A

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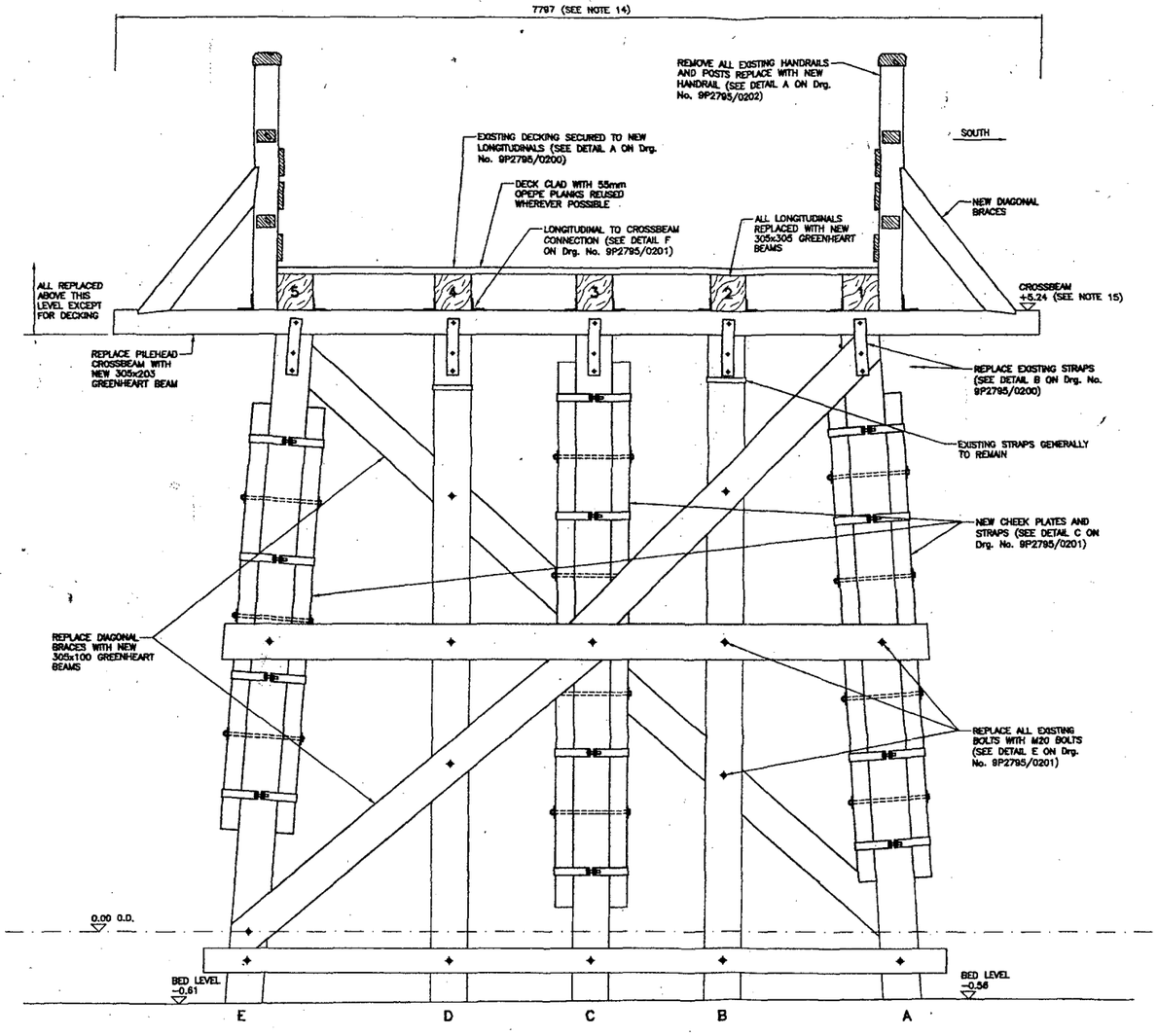
DRG No. 9P2795/0110 **DO NOT SCALE**



PILE BENT No. 13

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1461. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
13. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING, PACKING PIECES NOT PERMITTED.
14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
16. TOPS OF PILES TO BE SOUND AND TO HAVE FULL CONTACT WITH CROSSBEAM. DECAYED OR SHORT PILES TO BE TRIMMED DOWN AND TOPS REPLACED WITH NEW PILE HEADS.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

PLANNING DIVISION

PLAN No. ADC0321/07

DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AIK	RJG	ARP
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

CLIENT: WEST SUSSEX COUNTY COUNCIL

PROJECT: OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE: PILE BENT ALTERATIONS PILE BENT 13

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rams House
Harbourside Heath, PO16 9PG
+44 (0) 1444 458 551
+44 (0) 1444 448 888
info@royalhaskoning.com
www.royalhaskoning.com
Telephone
Fax
E-mail
Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0110		

DRAWING No. 9P2795/0110 REVISION A

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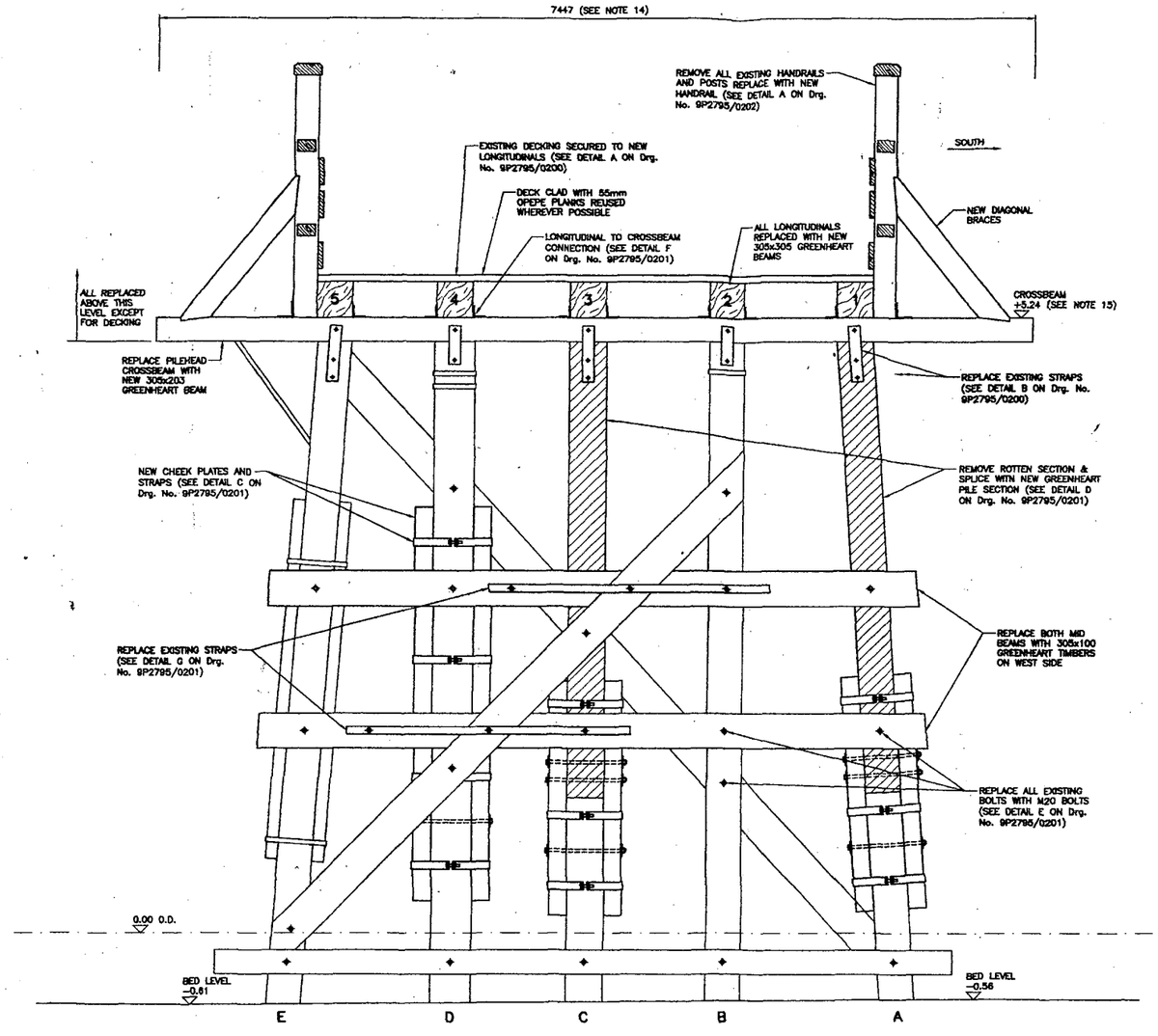
DRG No. 9P2795/0109 **DO NOT SCALE**



PILE BENT No. 12

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
13. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING, PACKING PIECES NOT PERMITTED.
14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
16. TOPS OF PILES TO BE SOUND AND TO HAVE FULL CONTACT WITH CROSSBEAM. DECAYED OR SHORT PILES TO BE TRIMMED DOWN AND TOPS REPLACED WITH NEW PILE HEADS.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

PLANNING DIVISION
PLAN No. ADC/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.08	CONSTRUCTION ISSUE	AIK	RJG	ARP
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

CLIENT: WEST SUSSEX COUNTY COUNCIL

PROJECT: OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE: PILE BENT ALTERATIONS PILE BENT 12

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rivers House
Harbands Road
Haywards Heath, RH16 1PG
+44 (0) 1444 448 051
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info@royalhaskoning.com
www.royalhaskoning.com
Telephone
Fax
E-mail
Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
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DRAWING No.	9P2795/0109	REVISION	A		

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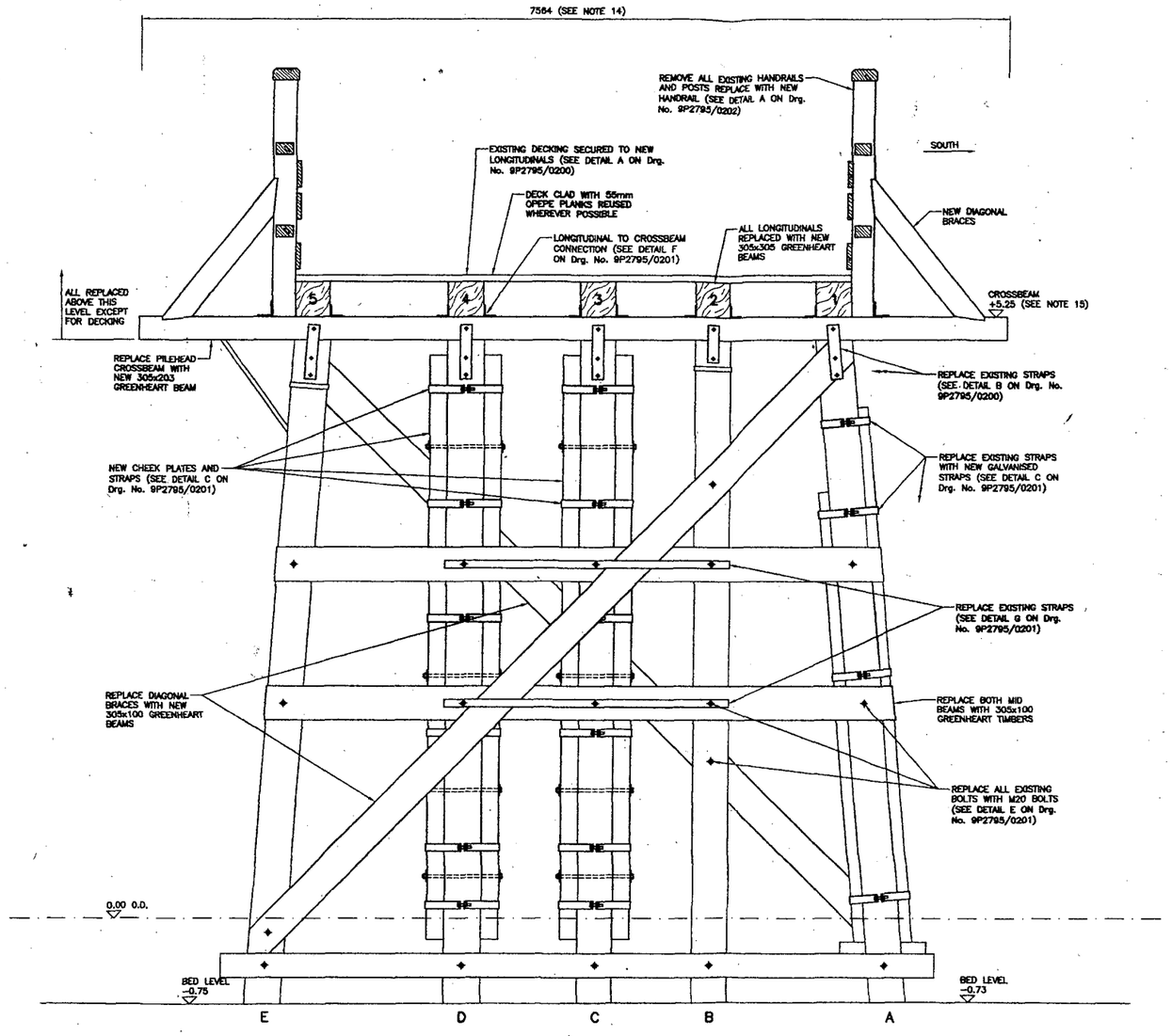

PILE BENT No. 11

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
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14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

ADC SOUNCIL
PLANNING DIVISION
PLAN No. ADC/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AIK	RJG	ARP
0	12.05	DETAILED DESIGN – EN REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS
PILE BENT 11

HASKONING UK LTD
COASTAL AND RIVERS
ROYAL HASKONING

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0108		

DRAWING No. 9P2795/0108 REVISION A

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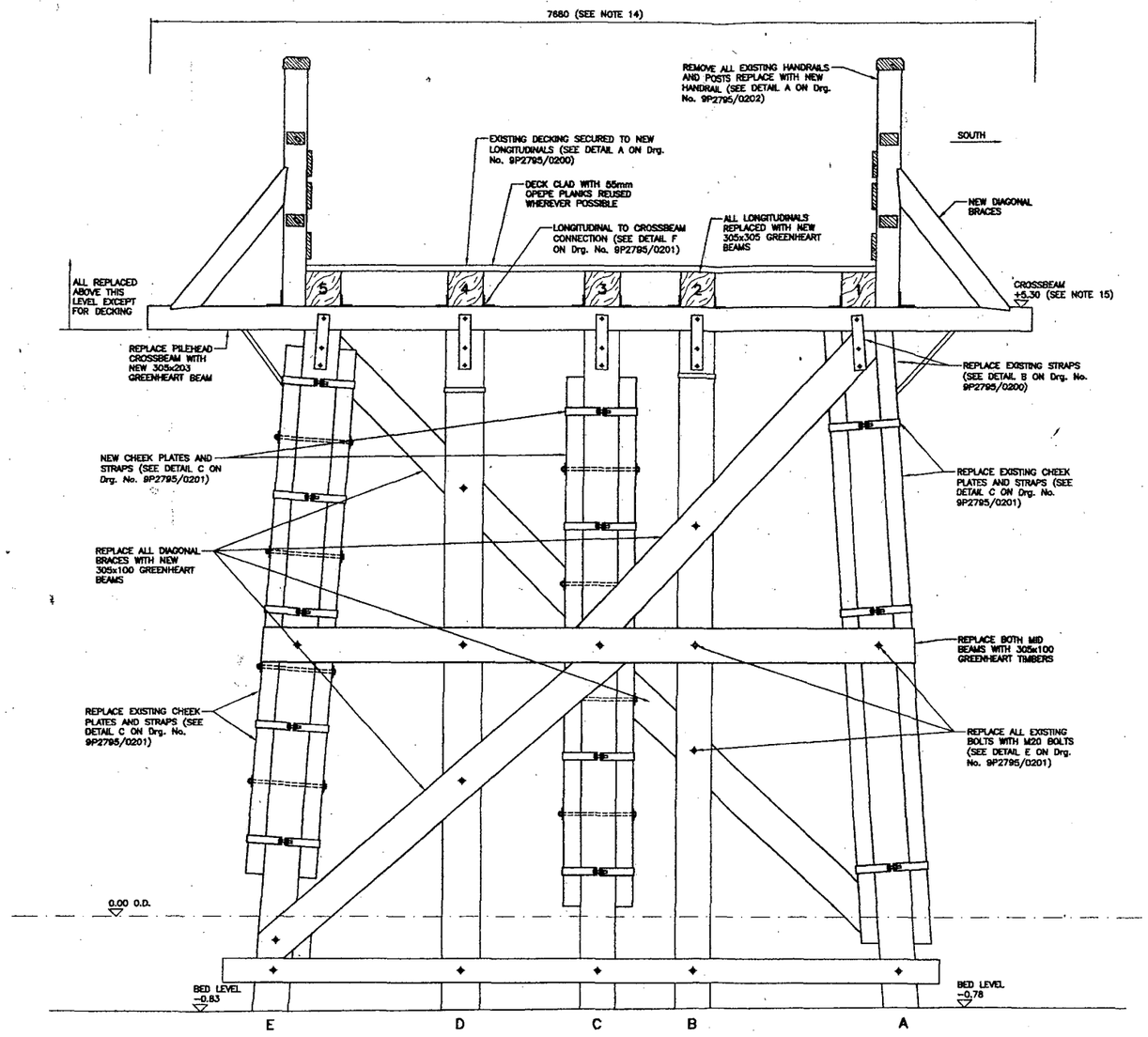
DRG No. 9P2795/0107 **DO NOT SCALE**



PILE BENT No. 10

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628–2 TO APPLY TO EDGE DISTANCES TO BOLTS.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

PLANNING DIVISION

PLAN No. adc0821/07

DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.05	CONSTRUCTION ISSUE	AIK	RJG	
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS PILE BENT 10

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Barns House
Harlands Road
Haywards Heath, RH16 1PG
+44 (0) 1444 458 551 Telephone
+44 (0) 1444 440 689 Fax
E-mail
Internet

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DATE	Dec. 2005	CLIENT'S REF.			
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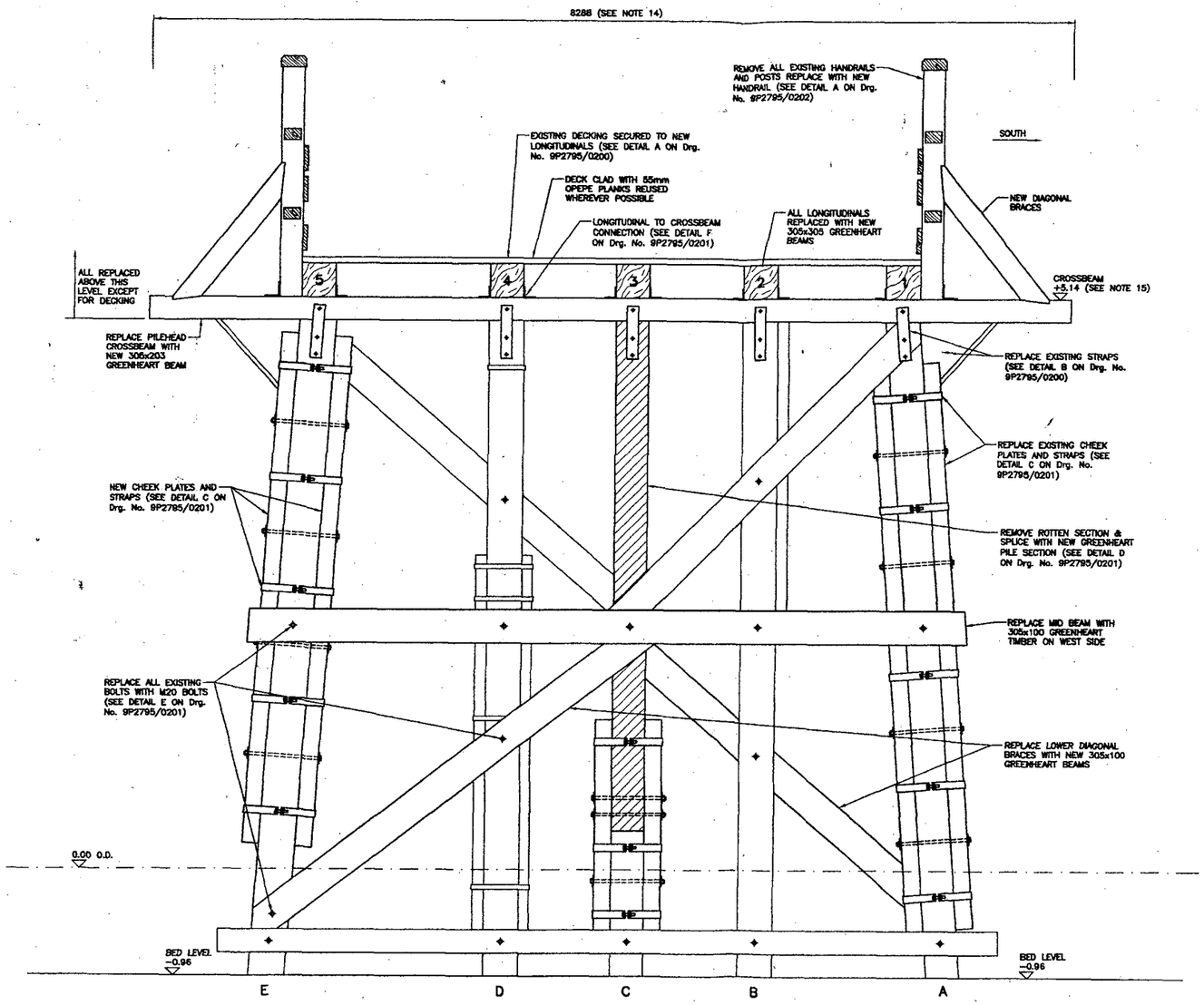

PILE BENT No. 9

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE *REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.*
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
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15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

PLANNING DIVISION
PLAN No. ADC0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AIK	RJG	ARP
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

CLIENT: WEST SUSSEX COUNTY COUNCIL

PROJECT: OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE: PILE BENT ALTERATIONS PILE BENT 9

ROYAL HASKONING
HASKONING UK LTD
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hsk@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

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DATE	Dec. 2005	CLIENT'S REF.			
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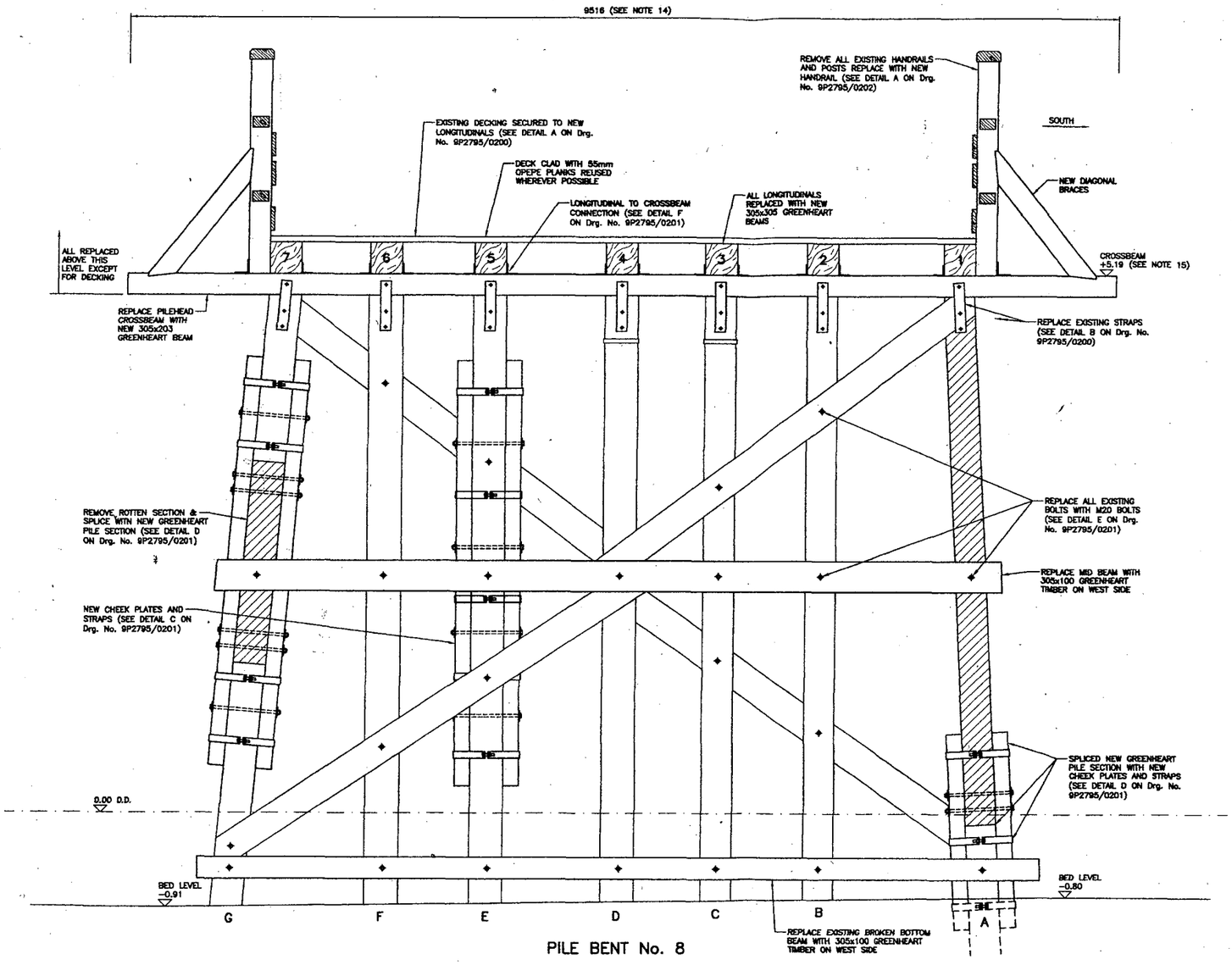

PILE BENT No. 8

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
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15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

WEST SUSSEX COUNCIL
PLANNING DIVISION
PLAN No. ADC/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	05.06	CONSTRUCTION ISSUE	AIK	RJG	
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT: WEST SUSSEX COUNTY COUNCIL

PROJECT: OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE: PILE BENT ALTERATIONS PILE BENT 8

ROYAL HASKONING
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COASTAL AND RIVERS
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info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
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DRAWING No. 9P2795/0105 REVISION A

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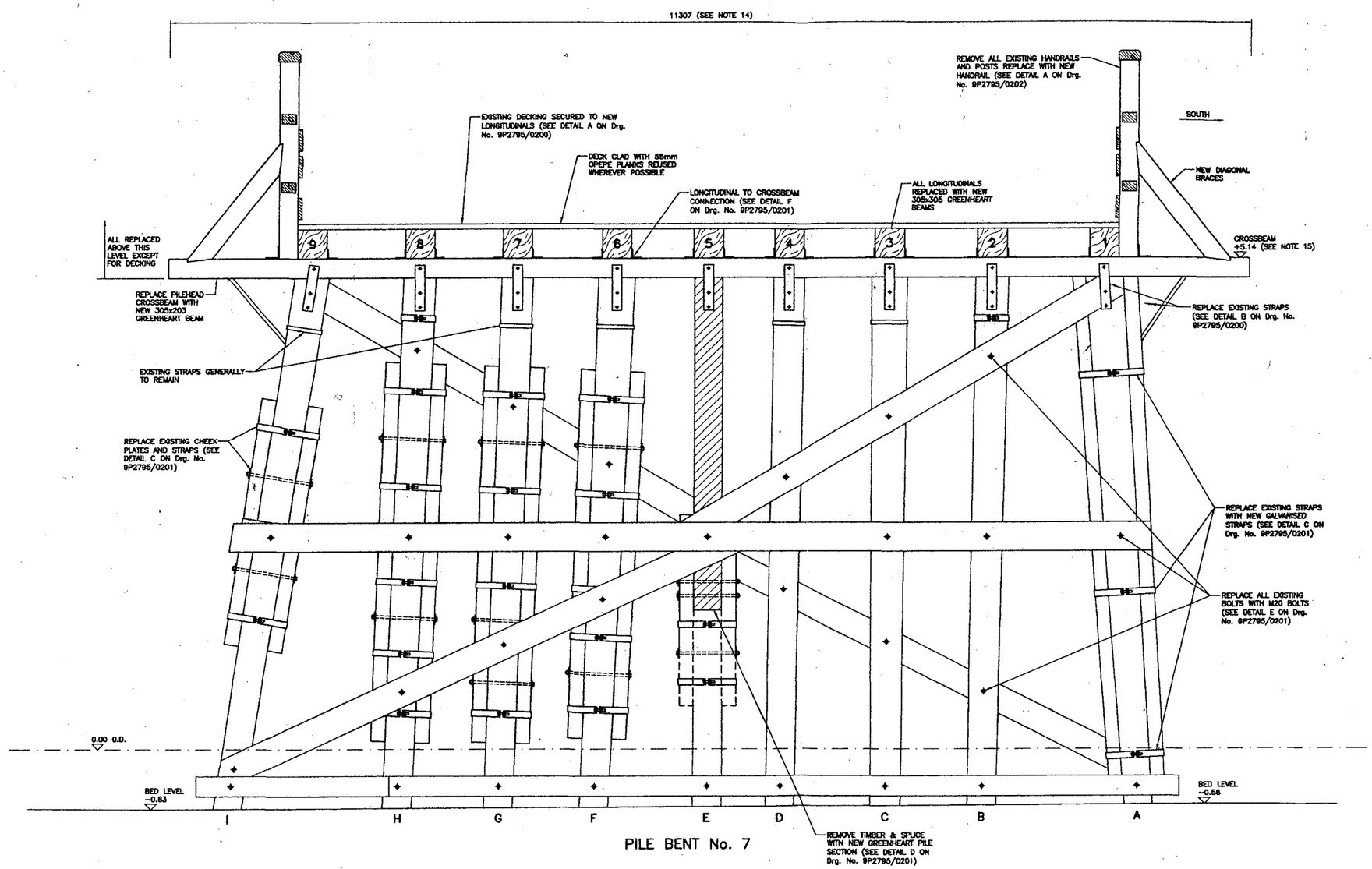

PILE BENT No. 7

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
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9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628–2 TO APPLY TO EDGE DISTANCES TO BOLTS.
13. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING, PACKING PIECES NOT PERMITTED.
14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

PLANNING DIVISION
PLAN No. ADC/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	ASK	BJG	ARP
0	12.05	DETAILED DESIGN – EH REVIEW	ASK	RJG	

REVISIONS

CLIENT: WEST SUSSEX COUNTY COUNCIL

PROJECT: OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE: PILE BENT ALTERATIONS PILE BENT 7

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rightwell House
Bush Road
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+44 (0) 1444 440 868 Fax
info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795–0104		
DRAWING No.	9P2795/0104	REVISION	A		

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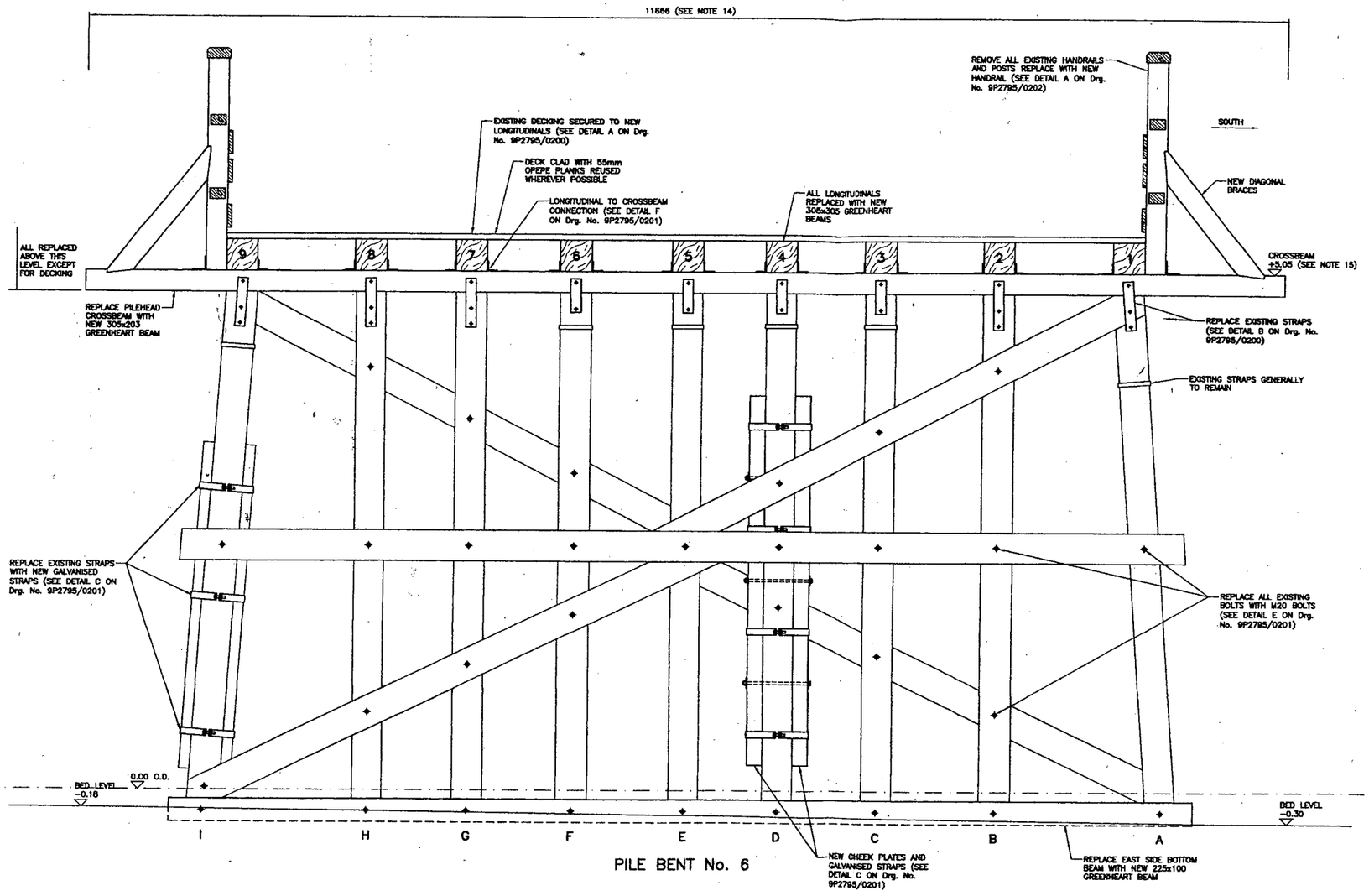
DRG No. 9P2795/0103 **DO NOT SCALE**



PILE BENT No. 6

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1480. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
13. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING, PACKING PIECES NOT PERMITTED.
14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
16. TOPS OF PILES TO BE SOUND AND TO HAVE FULL CONTACT WITH CROSSBEAM. DECAYED OR SHORT PILES TO BE TRIMMED DOWN AND TOPS REPLACED WITH NEW PILE HEADS.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT REPORT V.1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION

PLAN No. ADC/0321/07

DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.05	CONSTRUCTION ISSUE	AIK	RJG	
0	12.04	DETAILED DESIGN – EH REVIEW	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT ALTERATIONS PILE BENT 6

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Beare House
Hartlands Road
Haywards Heath, RH16 1PQ
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info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0103		
DRAWING No.	9P2795/0103	REVISION	A		

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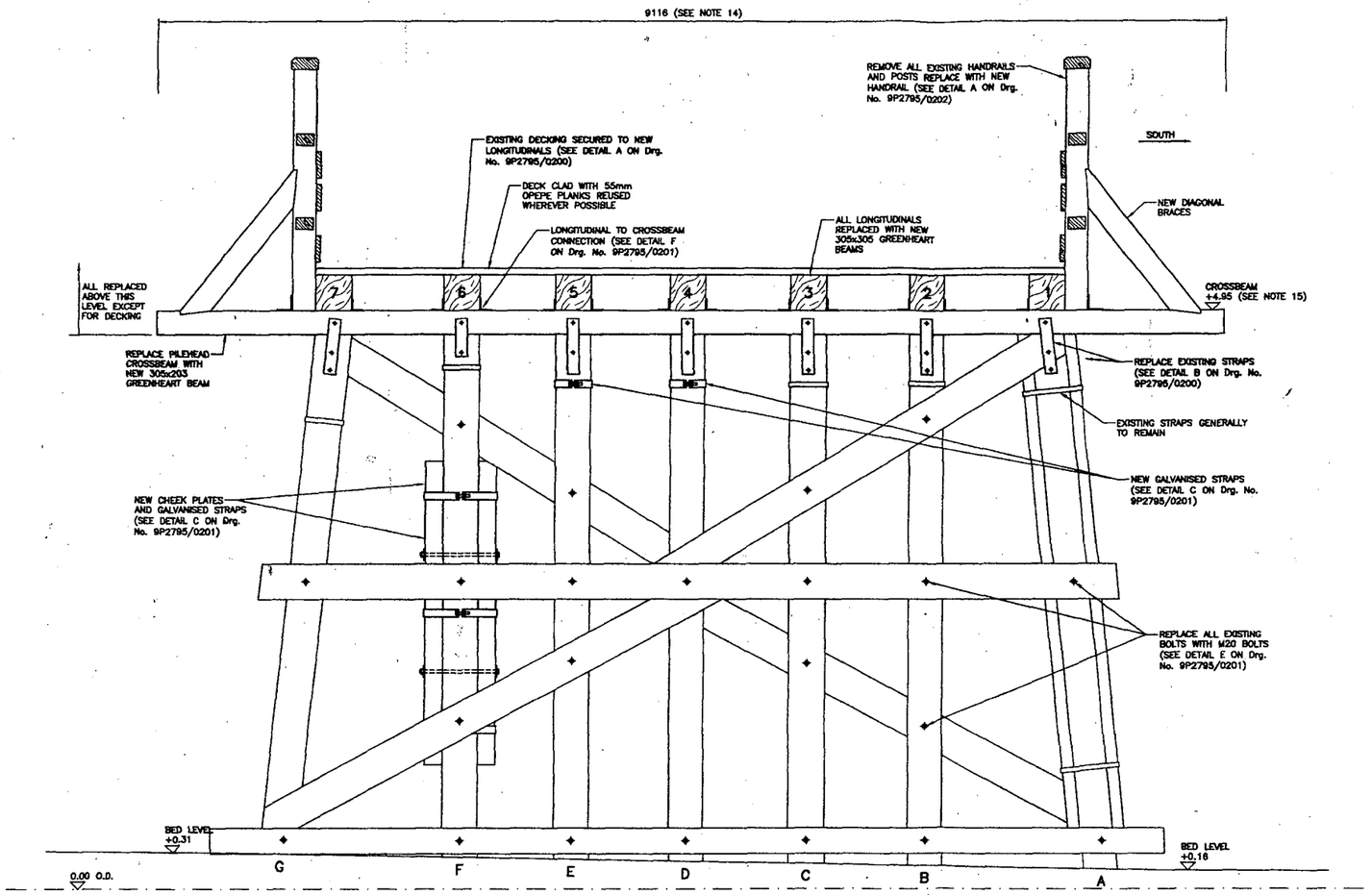

PILE BENT No. 5

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
13. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING, PACKING PIECES NOT PERMITTED.
14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
16. TOPS OF PILES TO BE SOUND AND TO HAVE FULL CONTACT WITH CROSSBEAM. DECAYED OR SHORT PILES TO BE TRIMMED DOWN AND TOPS REPLACED WITH NEW PILE HEADS.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT REPORT V1.4

ADUR DISTRICT COUNCIL
PLANNING DIVISION

PLAN No. ADC/0321/07

DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	05.06	CONSTRUCTION ISSUE	AIK	RJG	ARP
0	12.05	DETAILED DESIGN – EH REVIEW	AIK	RJG	

CLIENT: WEST SUSSEX COUNTY COUNCIL

PROJECT: OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE: PILE BENT ALTERATIONS PILE BENT 5

ROYAL HASKONING
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DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0102		
DRAWING No.	9P2795/0102	REVISION	A		

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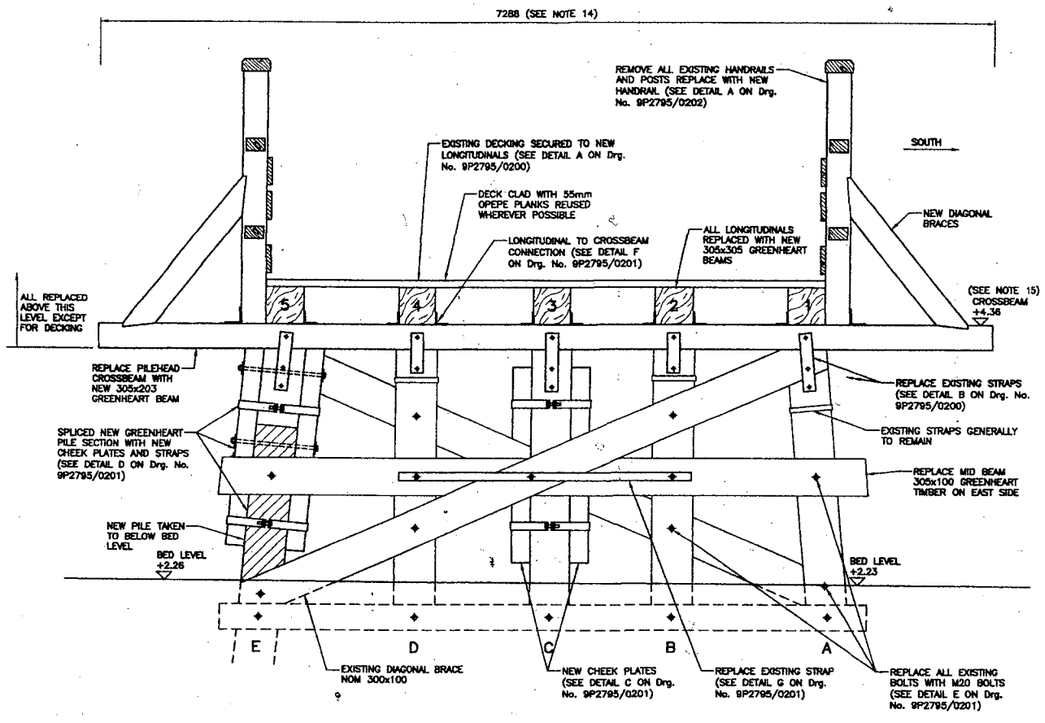
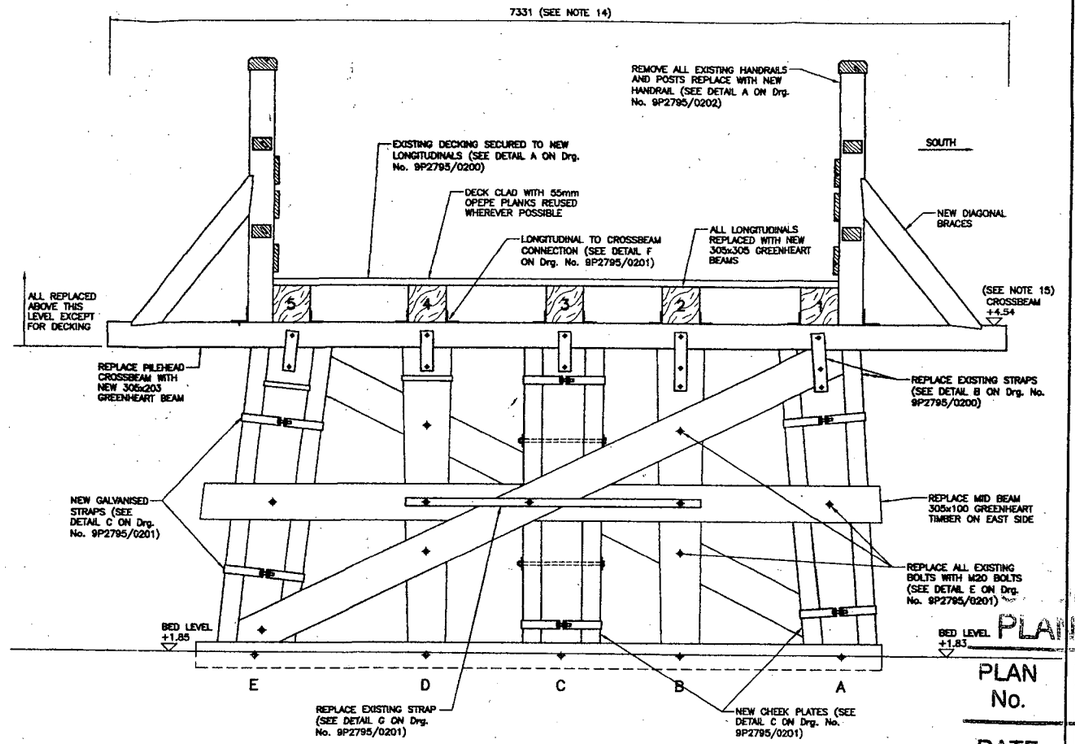
DRG No. 9P2795/0100 **DO NOT SCALE**



PILE BENT No. 1



PILE BENT No. 2

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
8. ALL STEEL TO TIMBER INTERFACES TO HAVE FULL BEARING.
9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
13. ALL TIMBER TO TIMBER INTERFACES TO HAVE FULL BEARING, PACKING PIECES NOT PERMITTED.
14. LENGTHS OF CROSSBEAM NOMINAL ONLY. LENGTHS TO BE ADJUSTED ON SITE TO ACHIEVE REGULAR ALIGNMENT.
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DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT, REPORT V.1.4

WEST SUSSEX COUNTY COUNCIL PLANNING DIVISION

PLAN No. ADC/0321/07

DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.08	CONSTRUCTION ISSUE	ABK		
0	12.05	DETAILED DESIGN – EH REVIEW	ABK	RJG	

REVISIONS

CLIENT: WEST SUSSEX COUNTY COUNCIL

PROJECT: OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE: PILE BENT ALTERATIONS PILE BENTS 1 & 2

ROYAL HASKONING
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DRAWN	A.I.K	CHECKED	RJG	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0100		
DRAWING No.	9P2795/0100	REVISION	A		

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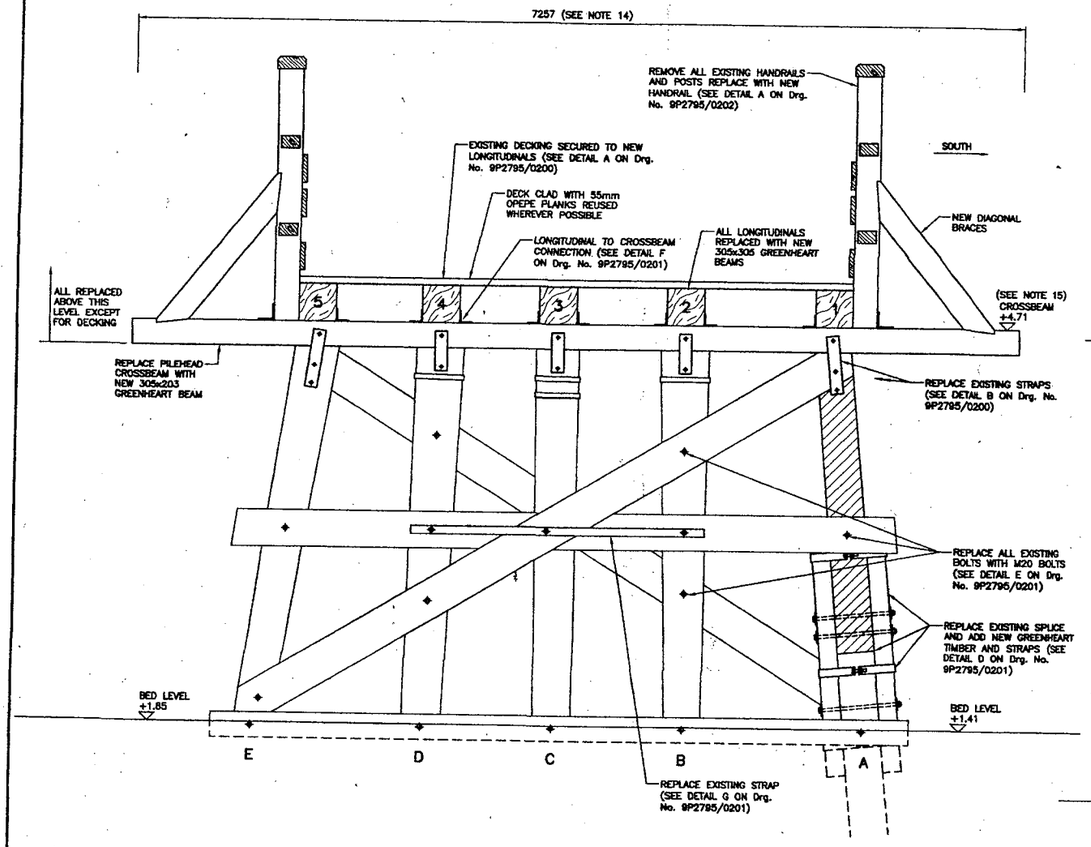
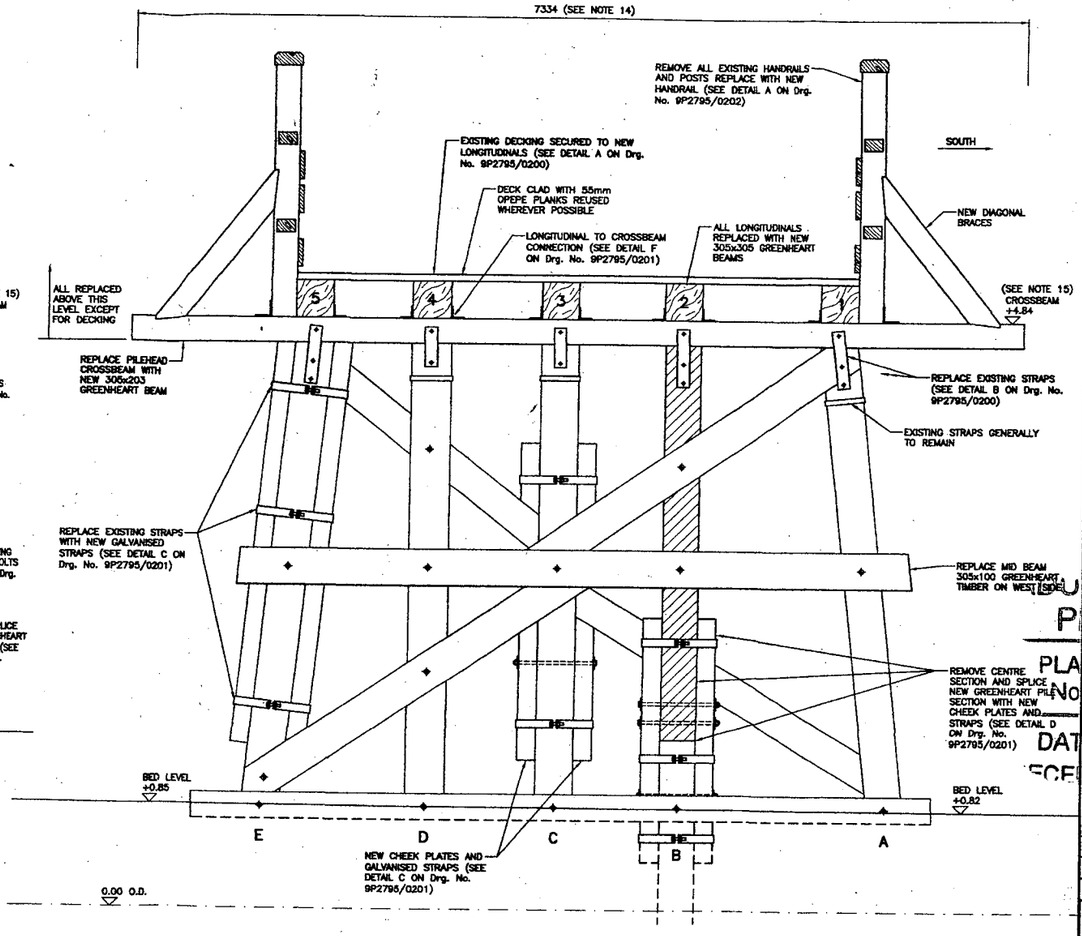


PILE BENT No. 3



PILE BENT No. 4

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL EXISTING METAL STRAPS SHOWN ARE TREATED AS CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. PLATES ETC. TO BE GRADE 43 STEEL – BOLTS TO BE GRADE 4.6, BLACK TO BS 4190.
7. ALL NEW STEELWORK (NUTS, BOLTS, WASHERS, PLATES ETC.) TO BE HOT DIPPED GALVANISED TO BS EN ISO 1460. DECORATIVE PAINT COATING TO BE APPLIED WITHOUT GRIT BLASTING OF GALVANISED COATING. ALL PAINT COATINGS TO BE AGREED PRIOR TO START ON SITE.
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9. ALL NEW PILE SECTIONS, BEAMS, BRACINGS ETC. TO BE HARDWOOD TIMBER, AS SPECIFIED.
10. NOMINAL DIMENSIONS GIVEN FOR ALL TIMBER SIZES.
11. FOR DETAILS OF CONNECTIONS AND HANDRAILING SEE Drgs. Nos. 9P2795/0200, 0201 & 0202.
12. WHERE EXISTING BOLTS ARE TO BE REPLACED, EXISTING BOLT POSITIONS TO BE MAINTAINED, WHERE POSSIBLE. OTHERWISE BS 5628-2 TO APPLY TO EDGE DISTANCES TO BOLTS.
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15. LEVELS OF CROSSBEAM NOMINAL ONLY. LEVELS TO BE ADJUSTED ON SITE TO ACHIEVE A REGULAR PROFILE.
16. TOPS OF PILES TO BE SOUND AND TO HAVE FULL CONTACT WITH CROSSBEAM. DECAYED OR SHORT PILES TO BE TRIMMED DOWN AND TOPS REPLACED WITH NEW PILE HEADS.

DRAWINGS TO BE READ IN CONJUNCTION WITH SHOREHAM TOLL BRIDGE REFURBISHMENT DESIGN STATEMENT REPORT V1.1

WEST SUSSEX COUNTY COUNCIL
PLANNING DIVISION
PLAN No. ADC/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.06	CONSTRUCTION ISSUE	AJK	RJG	ARP
0	12.05	DETAILED DESIGN – EH REVIEW	AJK	RJG	

REVISIONS

CLIENT: WEST SUSSEX COUNTY COUNCIL

PROJECT: OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE: PILE BENT ALTERATIONS PILE BENTS 3 & 4

ROYAL HASKONING
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www.royalhaskoning.com
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E-mail
Internet

DRAWN	A.J.K	CHECKED	RJG
DATE	Dec. 2005	CLIENT'S REF.	
SCALE AT A1	1:25	AUTOCAD REF.	9P2795-0101
DRAWING No.	9P2795/0101	REVISION	A

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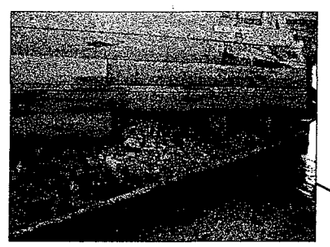
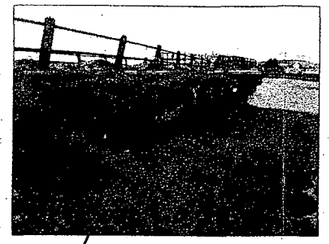








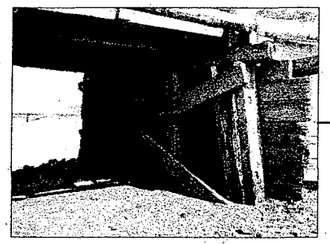
NORTH FACE

LOWER SECTION
WALL TYPE D
APPROX. 4420

APPROX. 2680

MIDDLE SECTION
WALL TYPE A
APPROX. 20400

UPPER SECTION



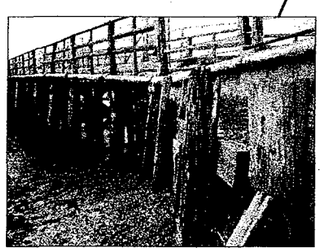
WALL TYPE C
APPROX. 7500



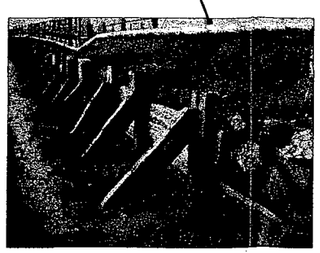
APPROX. 6200
WALL TYPE B
LOWER SECTION

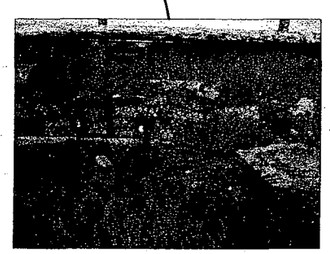
APPROX. 12700
WALL TYPE A
MIDDLE SECTION

NO WORKS
UPPER SECTION



SOUTH FACE





NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. FOR NEW WALL DETAILS SEE Drgs. Nos. 9P2795/0211 & 0212.
3. REPLACEMENT WALL TO EXTEND 1.5m PAST EXISTING WALL ON NORTHERN FACE.

ADC PLANNING DIVISION
PLAN No. ADC/0321/07
DATE RECEIVED 23 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	05.06	CONSTRUCTION ISSUE	ARK	[illegible]	APP
0	12.05	DETAILED DESIGN – EH REVIEW	ARK	SHW	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
EAST ABUTMENT SURVEY

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rume House
Harlands Road
Haywards Heath, RH16 1PG
+44 (0) 1444 458 551 Telephone
+44 (0) 1444 440 895 Fax
hdc@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	SHW	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:100	AUTOCAD REF.	9P2795-0016		

DRAWING No. 9P2795/0016 REVISION A

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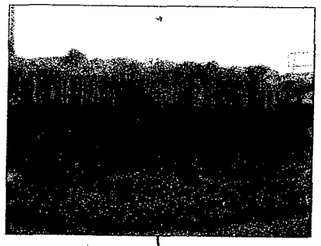
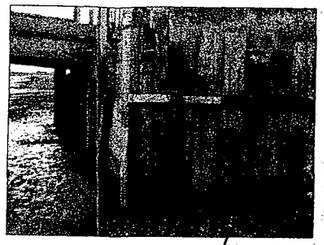
DRG No. 9P2795/0015 **DO NOT SCALE**

NORTH FACE

WALL TYPE E

APPROX. 17700

APPROX. 8300

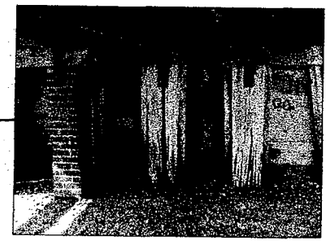
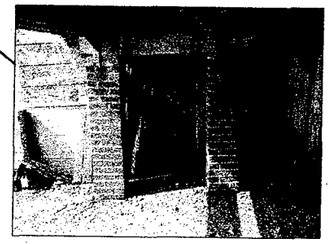
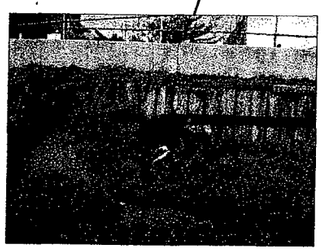
WALL TYPE C

APPROX. 22500

APPROX. 2150

WALL TYPE E

SOUTH FACE



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
2. FOR NEW WALL DETAILS SEE Drgs. nos. 9P2795/0211 & 0212.

WEST SUSSEX COUNTY COUNCIL
PLANNING DIVISION

PLAN No. APC/0321/07

DATE RECEIVED 23 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	02.06	CONSTRUCTION ISSUE	AJK	GSC	ARC
0	12.05	DETAILED DESIGN – EH REVIEW	AJK	SHW	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
WEST ABUTMENT SURVEY

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rightwell House
Bootle Road
Riverwell, PR16 9PG
Telephone +44 (0) 1444 464 851
Fax +44 (0) 1444 440 886
E-mail info@royalhaskoning.com
Internet www.royalhaskoning.com

DRAWN	AJK	CHECKED	SHW	PASSED	ARP
DATE	Dec. 2005	CLIENT'S REF.			
SCALE AT A1	1:100	AUTOCAD REF.	9P2795-0015		
DRAWING No.	9P2795/0015	REVISION	A		

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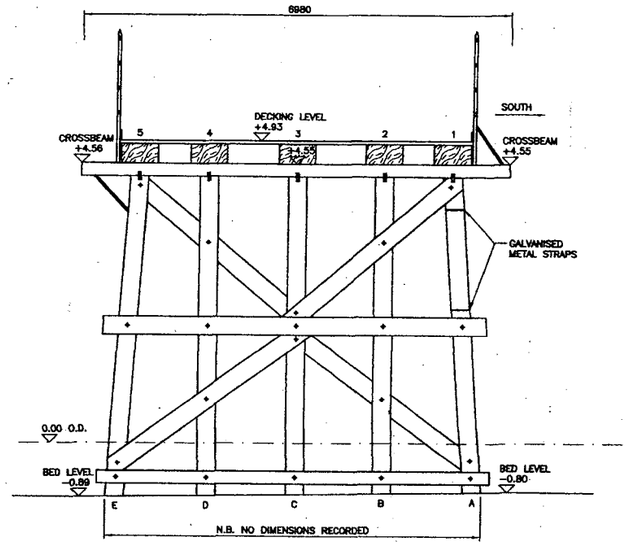
DRG No. 9P2795/0014 **DO NOT SCALE**



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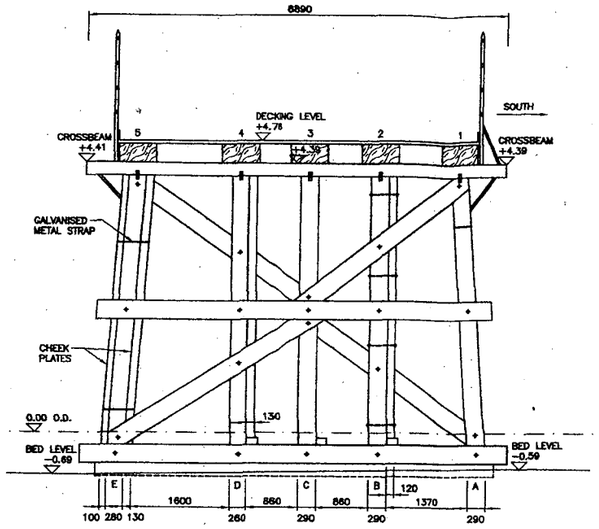

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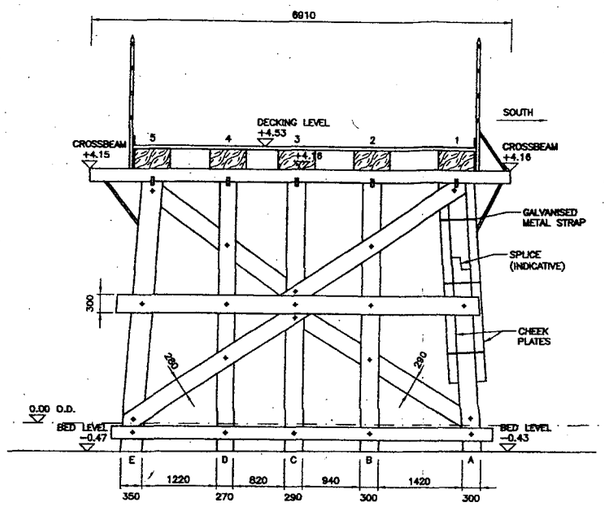

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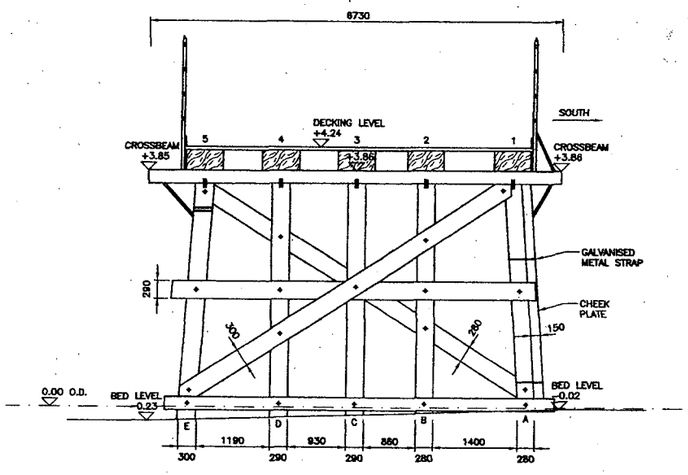

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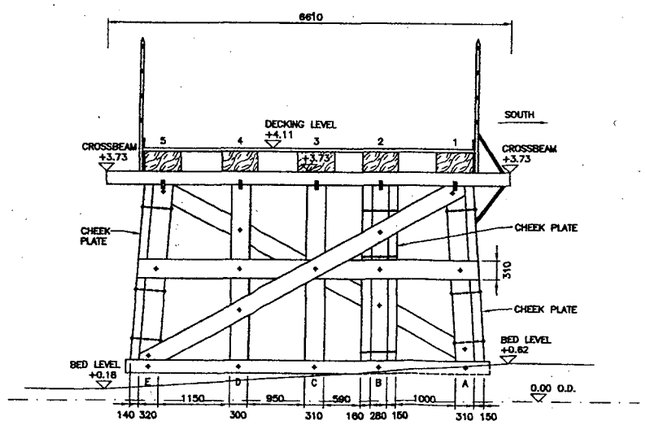

PILE BENT No. 26

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL METAL STRAPS SHOWN ARE CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. ALL LEVELS AND DIMENSIONS ARE APPROXIMATE AND SHOULD NOT BE USED TO DETAIL NEW WORKS.
7. ALL CONNECTION POSITIONS ARE APPROXIMATE ONLY.
8. ALL TIMBER UNLESS STATED OTHERWISE.

PLANNING DIVISION
PLAN No. ADC/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.08	CONSTRUCTION ISSUE	AIK	RJG	
–	05.10.05	CONDITION SURVEY REPORT ISSUE	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT SURVEY PILES 22 – 26

HASKONING UK LTD
COASTAL AND RIVERS
Burns House
Harlands Road
Haywards Heath, RH16 1PG
+44 (0)1444 458 551 Telephone
+44 (0)1444 440 886 Fax
info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet
ROYAL HASKONING

DRAWN	A.I.K	CHECKED	RJG	PASSED
DATE	Sep. 2005	CLIENT'S REF.		
SCALE AT A1	1:50	AUTOCAD REF.	9P2795–0014	
DRAWING No.	9P2795/0014	REVISION	A	

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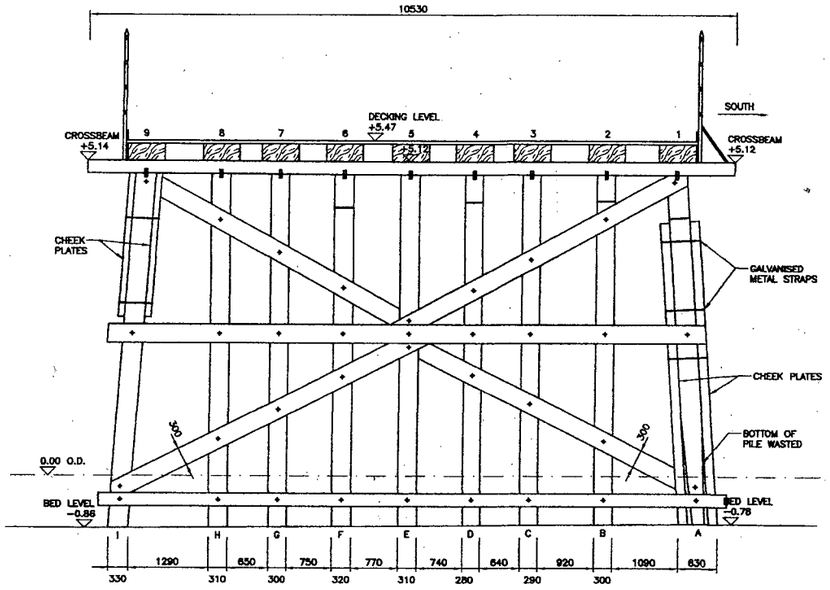
DRG No. 9P2795/0013 **DO NOT SCALE**



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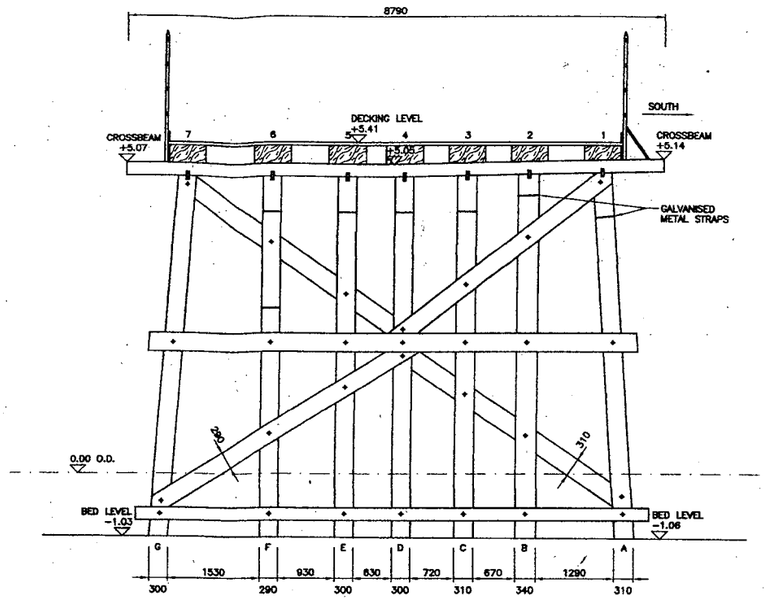

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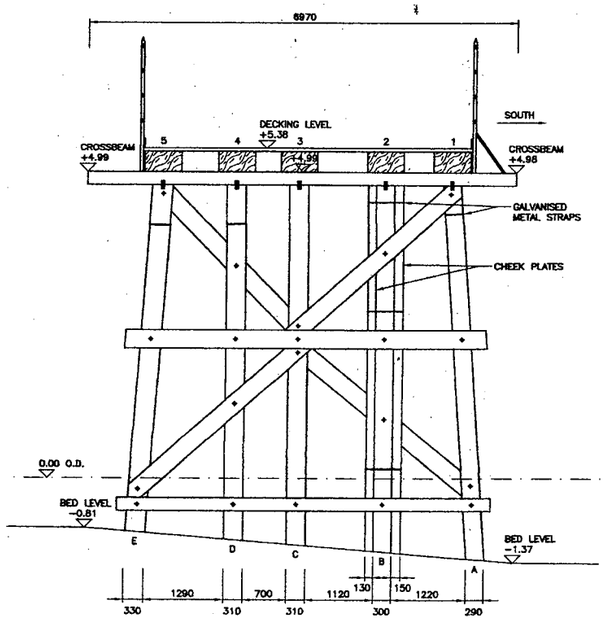

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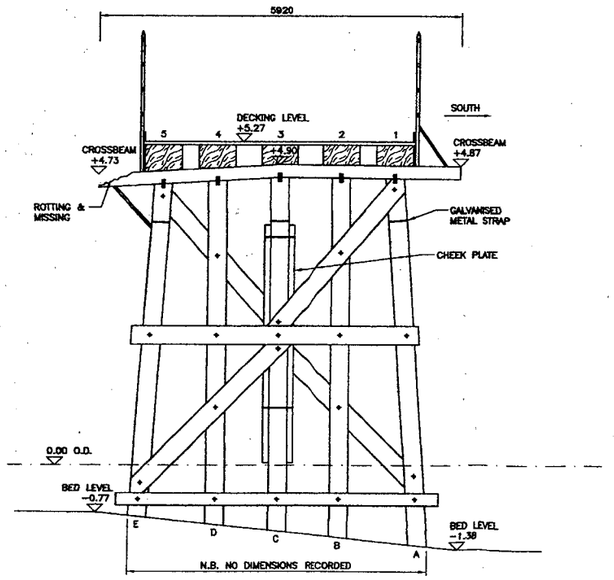

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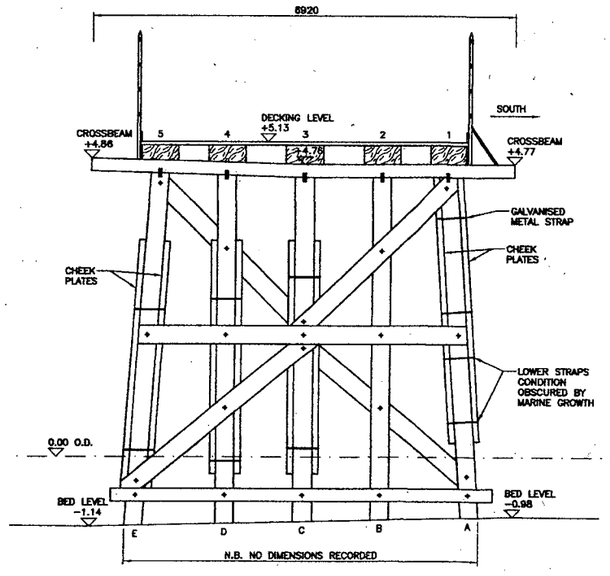

PILE BENT No. 21

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL METAL STRAPS SHOWN ARE CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. ALL LEVELS AND DIMENSIONS ARE APPROXIMATE AND SHOULD NOT BE USED TO DETAIL NEW WORKS.
7. ALL CONNECTION POSITIONS ARE APPROXIMATE ONLY.
8. ALL TIMBER UNLESS STATED OTHERWISE.

PLANNING DIVISION

PLAN No. ADC/0321/07

DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.08	CONSTRUCTION ISSUE	AIK	RJG	AM
–	03.10.05	CONDITION SURVEY REPORT ISSUE	AIK	RJG	

REVISIONS

CLIENT

WEST SUSSEX COUNTY COUNCIL

PROJECT

OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE

PILE BENT SURVEY PILES 17 – 21

ROYAL HASKONING

HASKONING UK LTD
COASTAL AND RIVERS
Burns House
Harlands Road
Haywards Heath, RH16 1PG
+44 (0) 1444 458 551 Telephone
+44 (0) 1444 440 665 Fax
info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED	
DATE	Sep. 2005	CLIENT'S REF.			
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DRAWING No.	9P2795/0013	REVISION	A		

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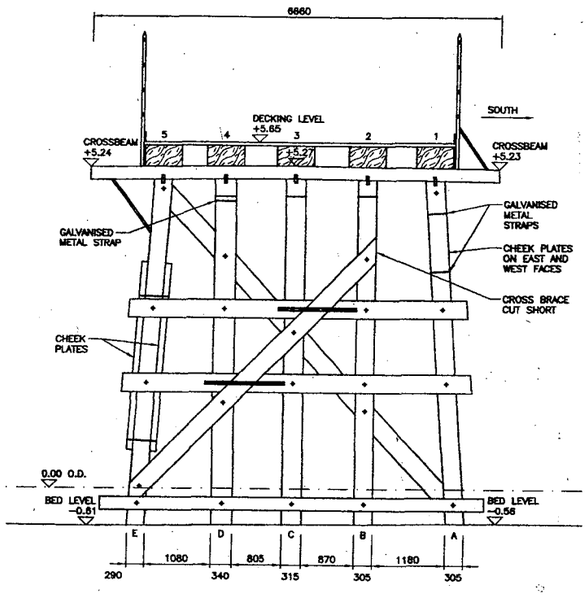

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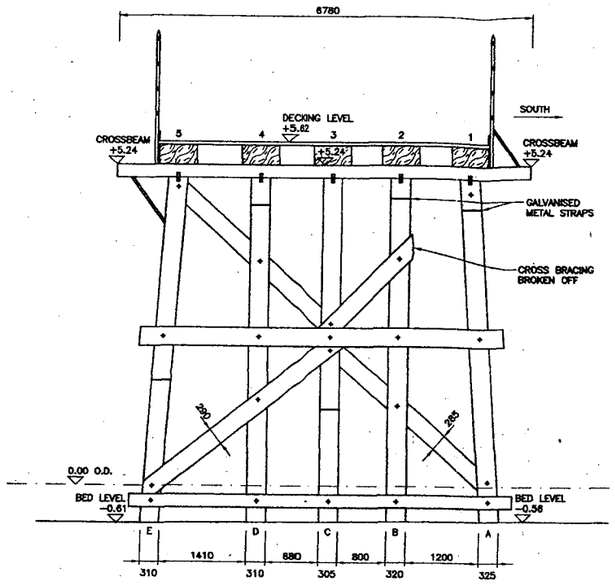

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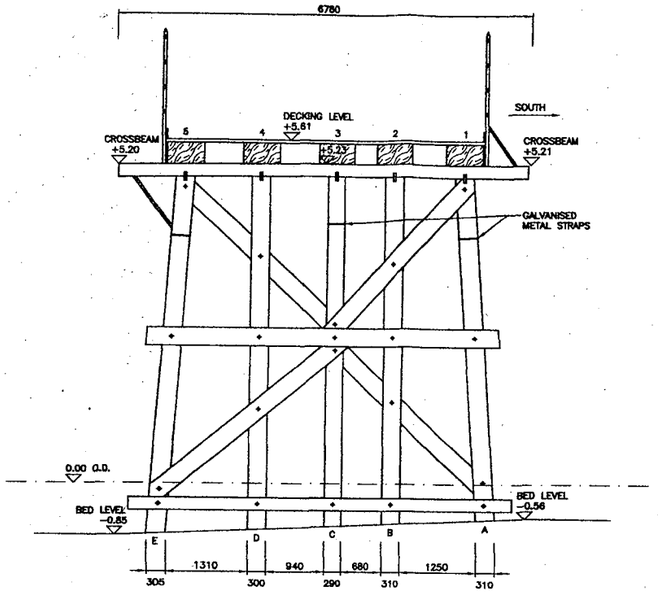

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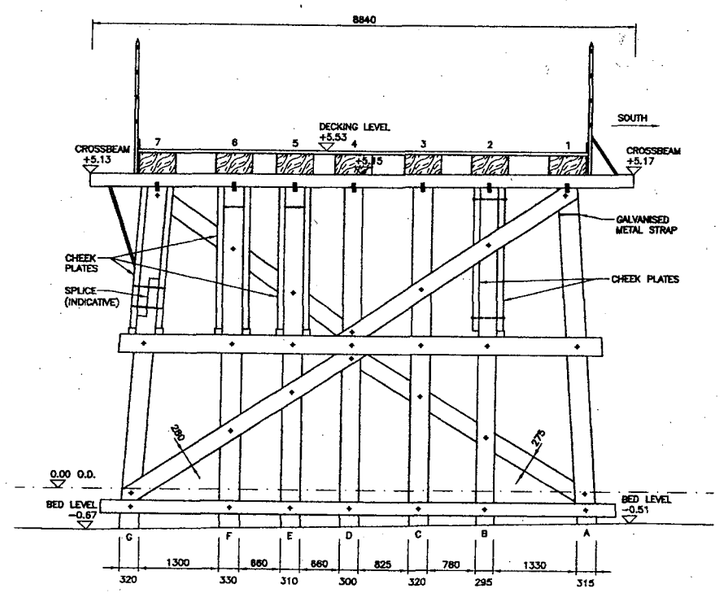

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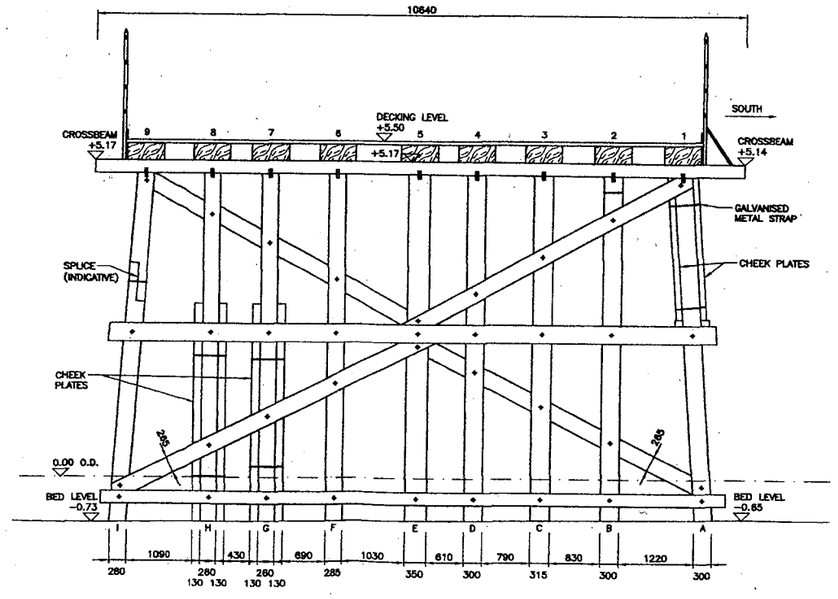

PILE BENT No. 16

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS, FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL METAL STRAPS SHOWN ARE CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. ALL LEVELS AND DIMENSIONS ARE APPROXIMATE AND SHOULD NOT BE USED TO DETAIL NEW WORKS.
7. ALL CONNECTION POSITIONS ARE APPROXIMATE ONLY.
8. ALL TIMBER UNLESS STATED OTHERWISE.

PLANNING DIVISION
PLAN No. AIDC/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.05	CONSTRUCTION ISSUE	AIK	RJG	
–	03.10.05	CONDITION SURVEY REPORT ISSUE	AIK	RJG	

REVISIONS

CLIENT: WEST SUSSEX COUNTY COUNCIL

PROJECT: OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE: PILE BENT SURVEY PILES 12 – 16

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rume House
Haywards Heath, RH16 1PG
+44 (0) 1444 458 551 Telephone
+44 (0) 1444 440 886 Fax
info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	RJG	PASSED
DATE	Sep. 2005	CLIENT'S REF.		
SCALE AT A1	1:50	AUTOCAD REF.	9P2795–0012	
DRAWING No.	9P2795/0012	REVISION	A	

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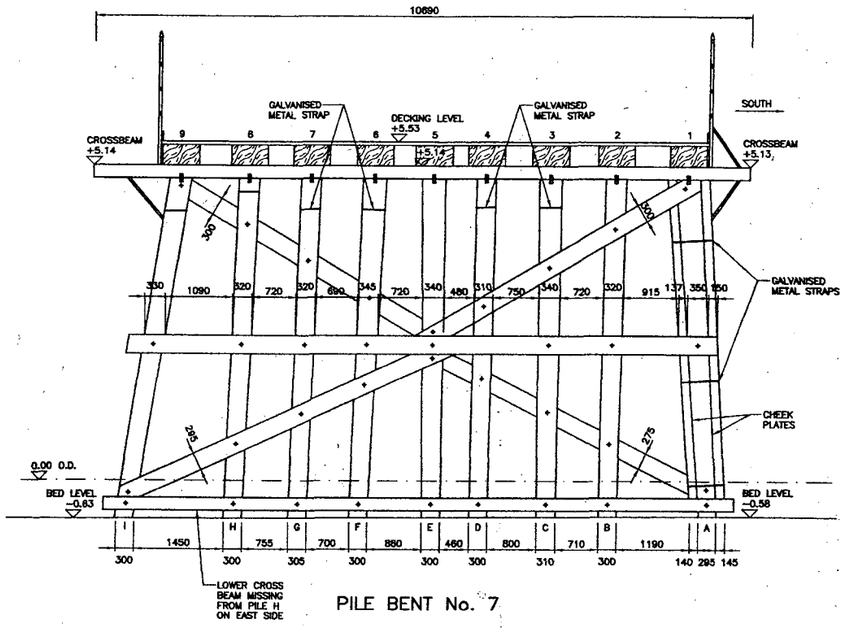
DRG No. 9P2795/0011 **DO NOT SCALE**



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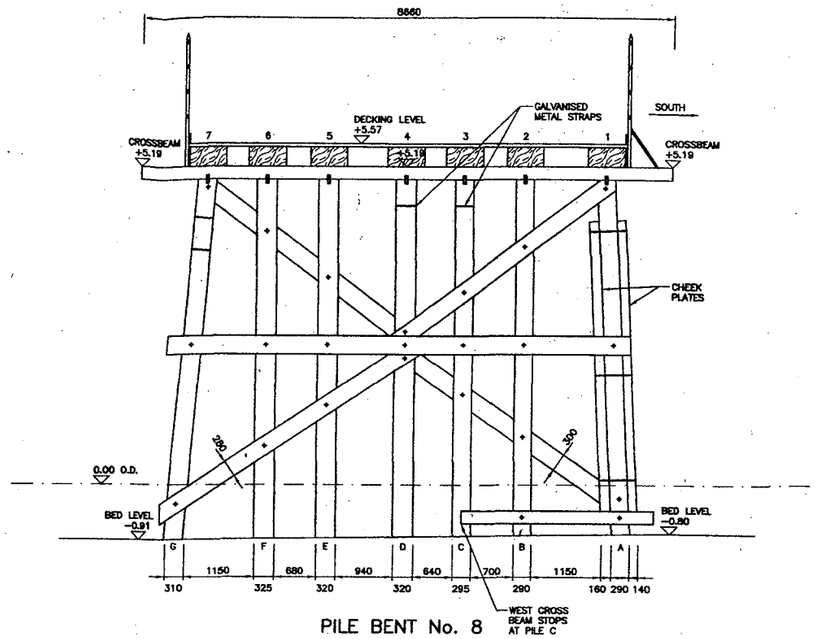

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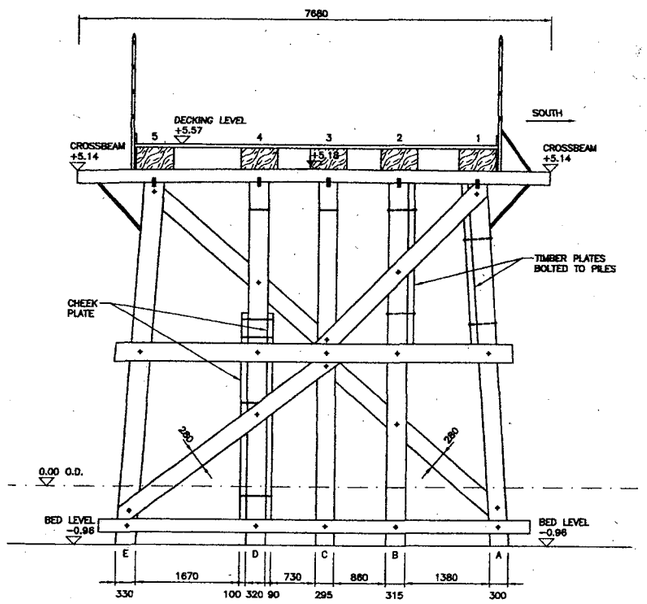

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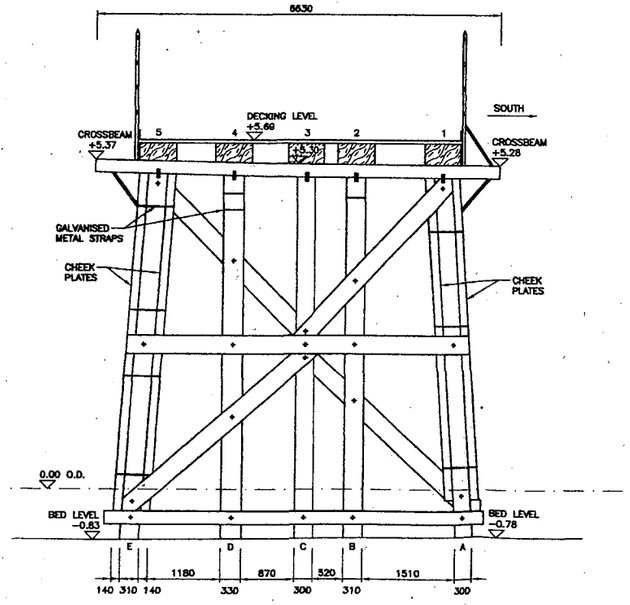

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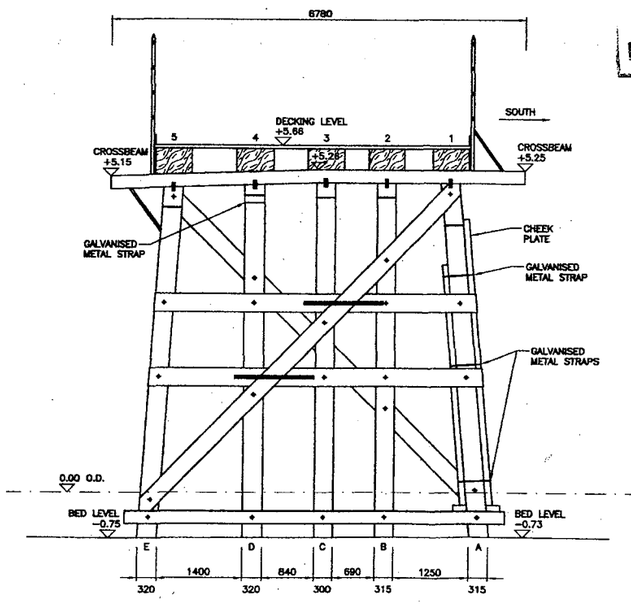

PILE BENT No. 11

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL METAL STRAPS SHOWN ARE CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. ALL LEVELS AND DIMENSIONS ARE APPROXIMATE AND SHOULD NOT BE USED TO DETAIL NEW WORKS.
7. ALL CONNECTION POSITIONS ARE APPROXIMATE ONLY.
8. ALL TIMBER UNLESS STATED OTHERWISE.

WEST SUSSEX COUNTY COUNCIL
PLANNING DIVISION
PLAN No. APC/0321/07
DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.05	CONSTRUCTION ISSUE	ABK	RJG	ABK
–	08.10.05	CONDITION SURVEY REPORT ISSUE	ABK	RJG	

REVISIONS

CLIENT: WEST SUSSEX COUNTY COUNCIL

PROJECT: OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE: PILE BENT SURVEY PILES 7 – 11

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Burns House
Harlands Road
Haywards Heath, RH16 1PG
+44 (0) 1444 458 551 Telephone
+44 (0) 1444 440 885 Fax
info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.J.K	CHECKED	RJG	PASSED
DATE	Sep. 2005	CLIENT'S REF.		
SCALE AT A1	1:50	AUTOCAD REF.	9P2795-0011	

DRAWING No. 9P2795/0011 REVISION A

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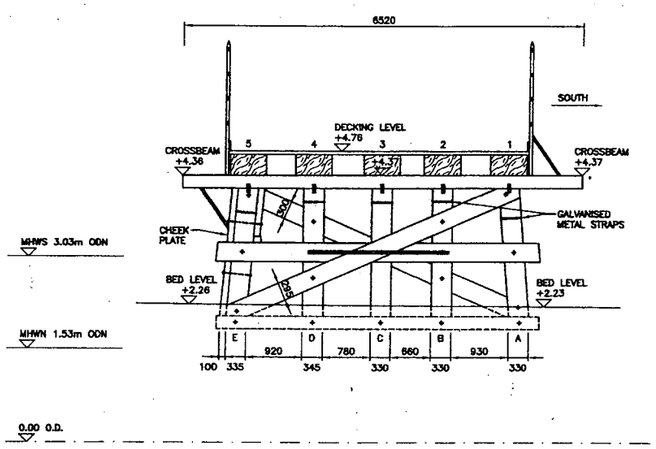
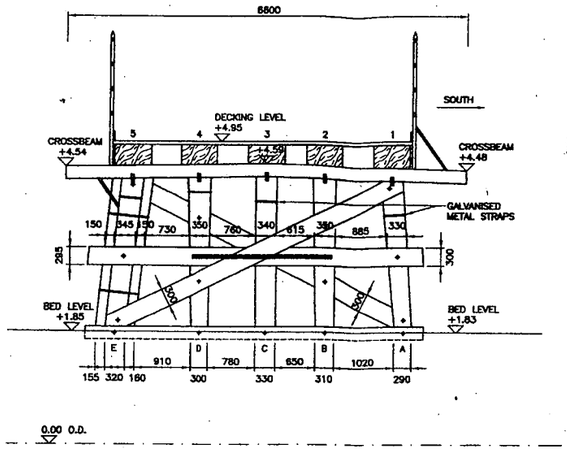
DRG No. 9P2795/0010 **DO NOT SCALE**



PILE BENT No. 1



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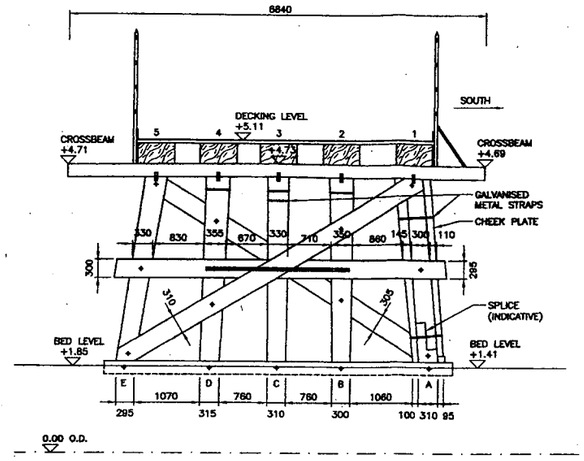

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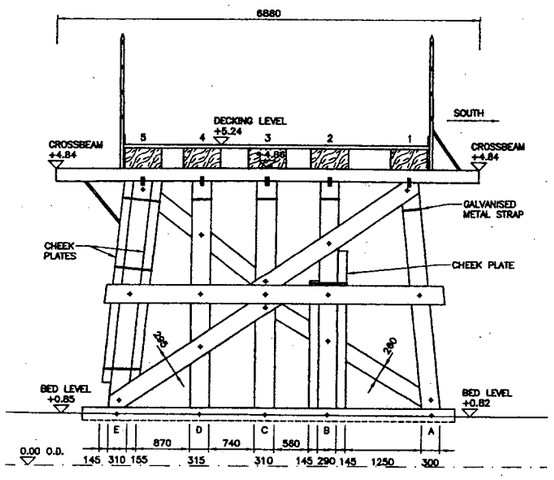

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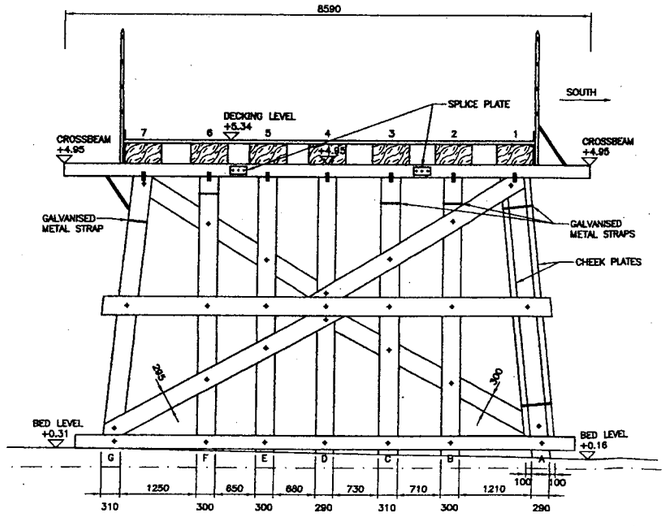

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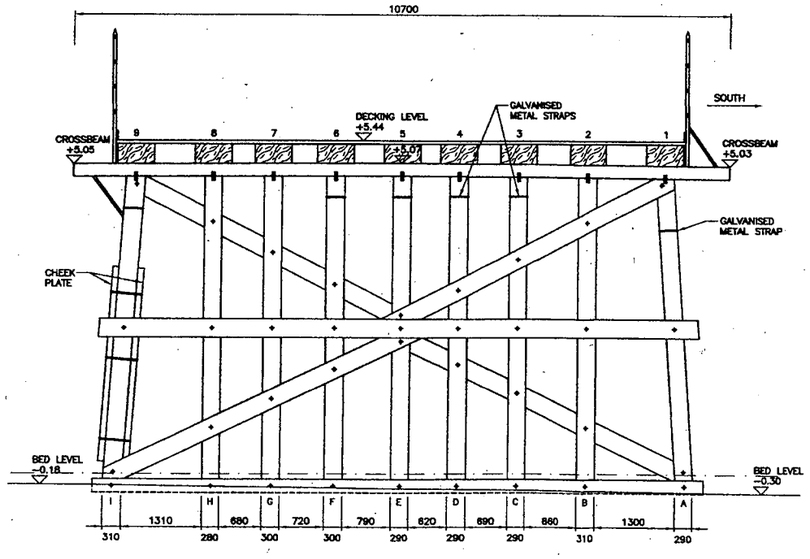

PILE BENT No. 6

NOTES:

1. ALL LEVELS ARE IN METRES RELATIVE TO ORDNANCE DATUM NEWLYN UNLESS NOTED OTHERWISE.
2. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.
3. THIS DRAWING FOCUSES UPON LEVELS & DIMENSIONS NOT DEFECTS. FOR FULL DESCRIPTIONS OF PILE CONDITION PLEASE REFER TO ROYAL HASKONING REPORT, SHOREHAM OLD TOLL BRIDGE SURVEY & CONDITION SCHEDULE. REF: 9P2795/R/RGR/HAYW, VERSION 1.1
4. ALL METAL STRAPS SHOWN ARE CORRODED IRONWORK UNLESS NOTED OTHERWISE.
5. FOR LOCATION OF PILE BENTS ON BRIDGE PLEASE REFER TO Drg. No. 9P2795/0001 SURVEY LAYOUT PLAN.
6. ALL LEVELS AND DIMENSIONS ARE APPROXIMATE AND SHOULD NOT BE USED TO DETAIL NEW WORKS.
7. ALL CONNECTION POSITIONS ARE APPROXIMATE ONLY.
8. ALL TIMBER UNLESS STATED OTHERWISE.
9. ALL TIDAL LEVELS SHOWN ARE FOR SHOREHAM PORT.

WEST SUSSEX COUNTY COUNCIL
PLANNING DIVISION

PLAN No. APC/0321/07

DATE RECEIVED 29 MAY 2007

REV	DATE	DESCRIPTION	BY	CHK	APP
A	03.08	CONSTRUCTION ISSUE	AIK	RJG	
–	03.10.06	CONDITION SURVEY REPORT ISSUE	AIK	RJG	

REVISIONS

CLIENT
WEST SUSSEX COUNTY COUNCIL

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

TITLE
PILE BENT SURVEY PILES 1 – 6

ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Rams House
Harrards Road
Haywards Heath, RH16 1PG
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+44 (0) 1444 440 089 Fax
info@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

DRAWN	A.I.K	CHECKED	R.J.G	PASSED
DATE	Sep. 2005	CLIENT'S REF.		
SCALE AT A1	1:50	AUTOCAD REF.	9P2795–0010	

DRAWING No. 9P2795/0010 REVISION A

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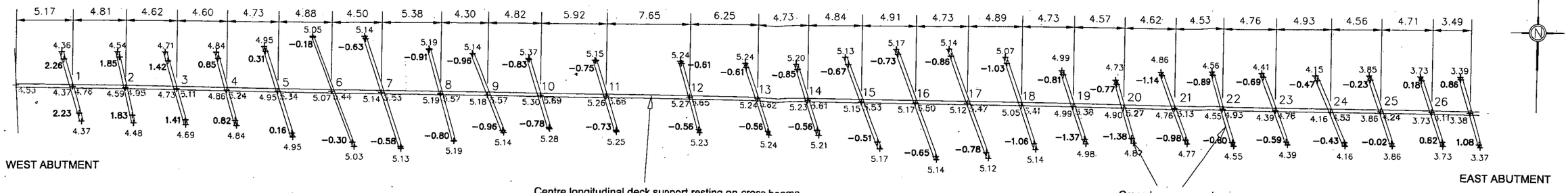
PLAN :



NOTES :

All levels shown are related to Ordnance Datum.
OSBM used is a cut mark on nearby St. Nicholas Church, value 5.88 above OS datum.

Crossbeams are timbers of 310mm width and 210mm depth except for No. 6 South end.
Cross beam levels have been observed at the top, middle & ends and are shown thus : $+^{5.25}$

Decking levels have been observed above the longitudinal centre support resting on the cross beams and are shown thus : $+^{5.66}$
Bridge surface decking is 55mm thick.

Levels have been observed at the river bed base of each cross beam outer support pile and are shown thus : $+_{-0.73}$

The survey was conducted on the 22nd and 23rd August 2005.

All levels and dimensions are approximate and should not be used to detail new works

Crossbeam number	Approximate length	Notes
1	6.52m	
2	6.60m	Decay at North and South ends
3	6.84m	
4	6.88m	
5	8.59m	
6	10.70m	Beam width 200mm, depth 300mm at South end.
7	10.69m	
8	8.66m	
9	7.68m	
10	6.63m	
11	6.78m	North end completely decayed, only strapping remaining.
12	6.66m	
13	6.78m	
14	6.70m	
15	8.84m	
16	10.64m	
17	10.53m	
18	8.79m	
19	6.97m	
20	5.92m	Decay at North end.
21	6.92m	
22	6.98m	
23	6.89m	
24	6.91m	
25	6.73m	Substantial decay at South end.
26	6.61m	
EA	6.58m	East abutment

PLANNING DIVISION
PLAN No. ADC/0321/07
DATE RECEIVED 29 MAY 2007

TITLE
STRUCTURE LEVELS SURVEY

PROJECT
OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

A COMPANY OF ROYAL HASKONING
HASKONING UK LTD
COASTAL AND RIVERS
Burns House
Harlands Road
Haywards Heath. RH16 1PG
+44 (0) 1444 458 551 Telephone
+44 (0) 1444 440 565 Fax
mail@royalhaskoning.com E-mail
www.royalhaskoning.com Internet

Job No.	9P2795	DATE	Sep. 2005	SCALE	N.T.S.
ACAD Ref.	9P2795-0002	CHECKED	RSG	PASSED	APL
DRAWN	A.I.K	DRG No.	9P2795/0002	REV	A

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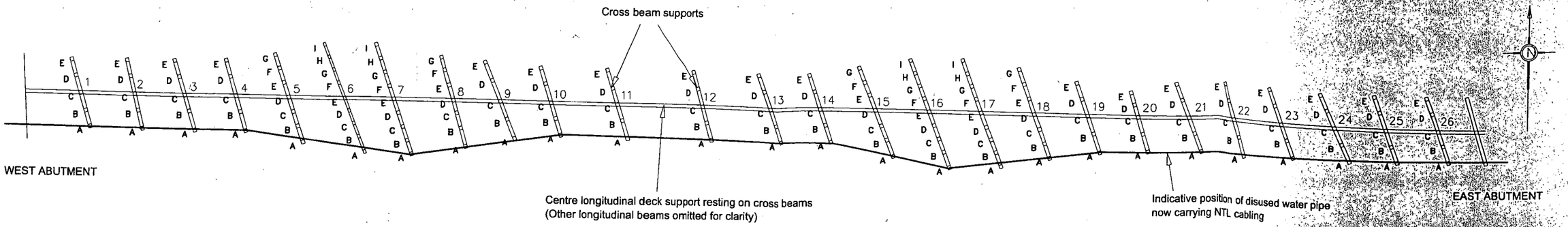
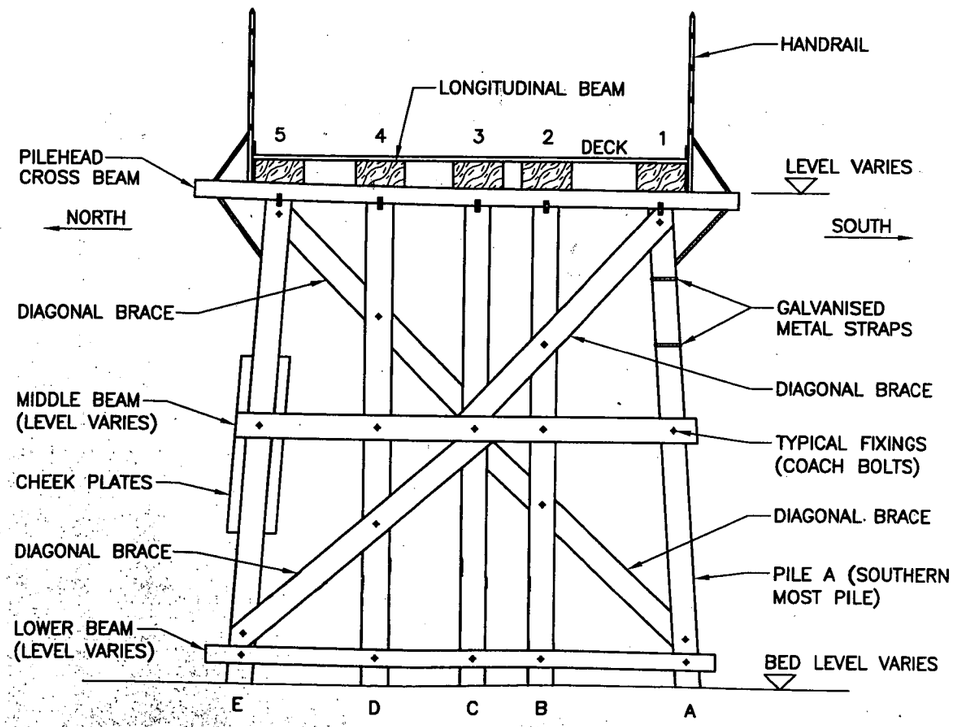


PLAN



TYPICAL SECTION

NOTES:

1. ALL TIMBER EXCEPT WHERE STATED.
2. REMAINS OF WWII ROADBLOCK POSITION IN ABEYANCE.

ROADBLOCK POSITION IN ABEYANCE

PLANNING DIVISION
PLAN No ADC/0321/07
DATE RECEIVED 29 MAY 2007

TITLE: SURVEY LAYOUT PLAN

PROJECT: OLD SHOREHAM TOLL BRIDGE REFURBISHMENT

ROYAL HASKONING
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